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The OIL and GAS JOURNAL

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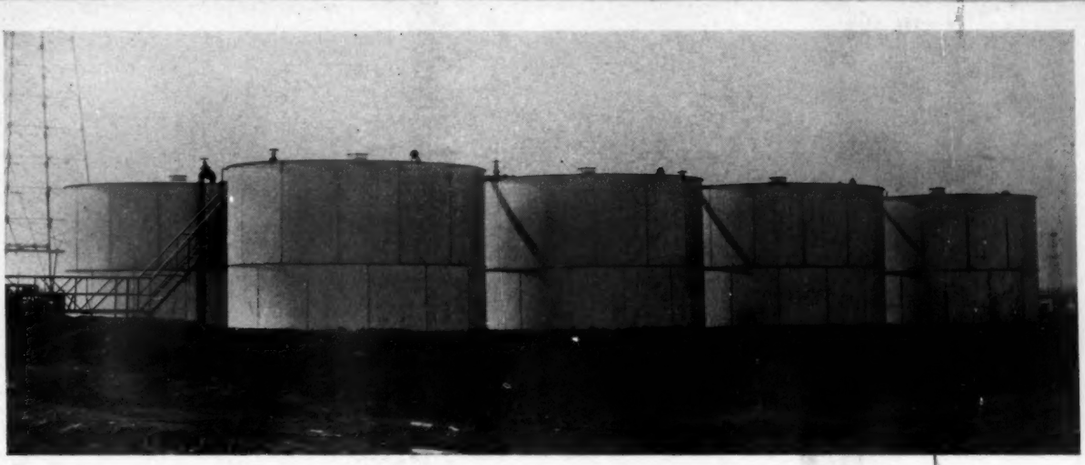

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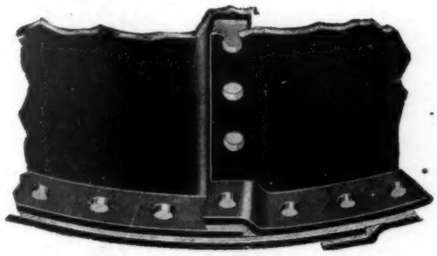

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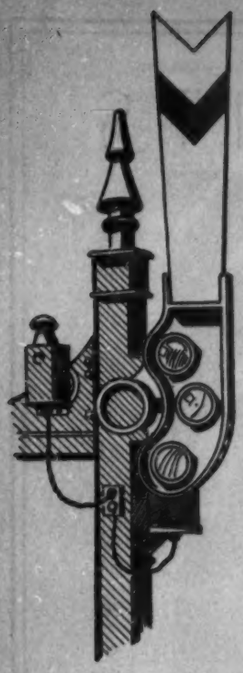

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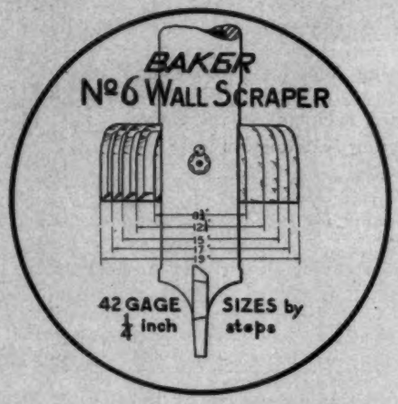

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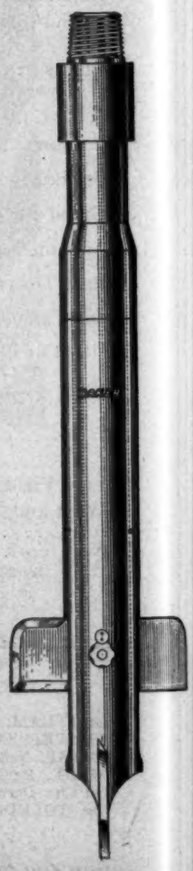

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Crude Oil and Gasoline Prices Depend on Type of Enforcement of Proration in East Texas

By ANDREW M. ROWLEY

JUST what the oil industry may expect in the way of prices for both crude oil and refined products during the remainder of this year will be determined by the enforcement or lack of enforcement of proration regulations in East Texas. Setting allowables in that area has meant nothing in the past except as a gauge to measure the extent of violations. Few in the industry expect any real improvement in this condition under the present set-up of enforcement.

East Texas is the key to the entire situation. Oklahoma City no longer is regarded as a menace. Potentials being taken in that field certainly bear out the contention long made by this publication that rated potentials mean little or nothing. One well in the Oklahoma City Field which had been rated as able to produce 31,000 barrels daily would not flow when first opened up. And owners of properties in that field are convinced production there must be curtailed strictly to the best engineering practices.

More than 90 per cent of the operators in the East Texas Field have favored strict enforcement of proration regulations. They and the whole industry have suffered a long period of low prices because of the flagrant violations on the part of less than 10 per cent of the operators who are not interested in the business as a whole but solely in getting large returns quickly. If this large majority of law-abiding operators cannot stop these hot oil operations and state authorities will not enforce the regulations, the industry probably would be far better off if it permitted Nature to take its course. Everyone then would be on an equality and the hot oil operator would soon pass from the picture for he would be the first to sink under the pressure of low prices which would prevail.

Sufficient engineering data are available to show the effect on bottom hole pressures in East Texas of excessive flowing of wells. If the new proration order for East Texas is not enforced and if the industry is convinced the situation there in regard to enforcement is just what it has always been in the past, there should no longer be any hesitancy on the part of all operators in the field to "let Nature take its course" and let the hot oil operator drown in the flood of crude which would result.

Crude oil and gasoline prices will go up or down within the very near future, just as soon as the industry determines what can be expected from proration enforcement in East Texas. Prices are too low if enforcement is effective and they are too high if the hot oil operators continue their practices undisturbed.

Crude Oil Production in the United States

Estimated daily average production for the week ending April 15, and a comparison with previous week and one year ago, follows:

	Apr. 15	Apr. 8	Apr. 16, 1932
Oklahoma—			
Oklahoma City	30,615	82,835	67,435
Seminole-St. Louis	104,520	106,720	122,810
Remainder of State	200,485	197,385	204,740
Total Oklahoma	335,620	386,940	394,985
East Texas—			
Lathrop	59,145	174,715	126,610
Kilgore	38,280	127,245	109,521
Joiner	42,325	132,450	107,283
Total East Texas	139,750	434,410	343,414
West Texas	160,460	162,645	178,695
North Central Texas	75,236	73,261	74,052
Texas Panhandle	48,415	45,407	52,035
East Central Texas	57,595	58,810	54,980
Gulf Coast—Texas	149,214	149,525	105,522
Southwest Texas	52,163	51,609	57,417
Total State of Texas	682,833	975,667	866,115
Kansas	121,640	120,985	99,730
North Louisiana	30,835	30,730	28,380
Gulf Coast—Louisiana	40,692	40,835	32,862
Arkansas	30,305	30,315	35,000
Eastern Fields	106,000	107,000	117,000
Rocky Mountain area	74,923	75,430	85,233
California—			
Santa Fe Springs	53,500	53,500	67,250
Long Beach	68,000	68,000	82,000
Playa Del Rey	11,750	11,750	18,500
Elwood	12,500	13,000	17,250
Kettleman Hills	59,250	57,250	60,000
Remainder of State	263,500	259,500	273,000
Total California	468,500	463,000	518,000
Total United States	1,891,348	2,230,902	2,177,305

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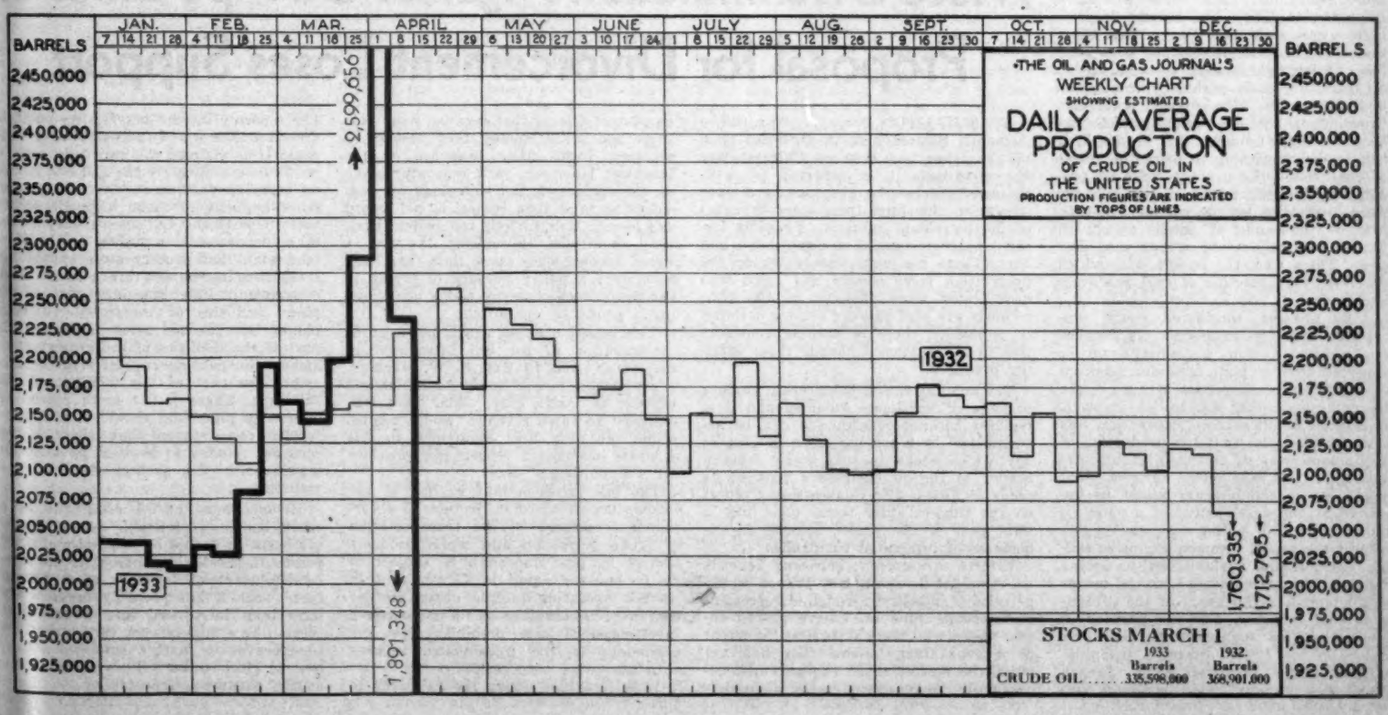

Col. Donovan Outlines Possible Application of Appalachian Decision to the Oil Industry

By A. E. MOCKLER
New York Bureau, The Oil and Gas Journal

NEW YORK, Apr. 17.—The application of the principles embodied in the recent decision of the U. S. Supreme Court in the Appalachian Coals case to the problems of the petroleum industry might permit the organisation of selling agencies, representative of a number of small units, to strengthen their competitive position and place them on a more nearly equal footing, from the competitive standpoint, with the larger units, in the opinion of Col. William J. Donovan, former assistant U. S. Attorney General, and a leading authority on antitrust laws.

In addition, Colonel Donovan pointed out, under certain conditions and in certain markets, the use of commonly controlled service stations would be in the interest both of the oil companies and of the public in that they would promote economical marketing and thereby curb the overexpansion in the building of retail outlets, while at the same time preserving an active competitive condition.

In response to an inquiry from The Oil and Gas Journal as to the possible application of the Appalachian decision to the oil and gas industry, Colonel Donovan said:

Colonel Donovan's Statement

On March 13, the Supreme Court upheld the legality under the Sherman Antitrust Act of a common exclusive selling agency formed by 137 producers of bituminous coal located in the southern high volatile coal fields.

The significance of this opinion becomes apparent upon an examination of the facts which led up to the organization of Appalachian Coals, Inc.

In the fall of 1931, a small group of independent producers of bituminous coal met in New York for the purpose of considering possible means of alleviating the deplorable conditions which had long existed in the bituminous coal industry. The industrial depression beginning in the fall of 1929 was not the cause of these conditions. Their cause was more fundamental. They had become increasingly worse since the World War. Since that time, bituminous coal had been waging a losing fight against the competition of substitute fuels such as oil, gas and hydroelectricity. The excess productive capacity of the coal mines which had been developed during the World War had tended inevitably to drive the prices of coal below the average price of production. The difficulties of the industry were intensified by the ruinous competition of thousands of small, poorly financed and ill-advised selling organizations. These were the factors with which the New York meeting of coal producers had to deal.

This meeting considered every conceivable type of suggestion. It reached the conclusion that no relief could be expected from a plan involving physical consolidation of properties because of the financial and other difficulties involved. It rejected as illegal and impractical any attempt either to limit the production of bituminous coal or to establish uniform prices. It was concluded, however, that conditions in the industry might be improved by the development of a more efficient method of selling coal, and in this respect the use of common exclusive selling agencies in various coal-producing districts was recommended as the means best adapted to the needs of the bituminous coal industry. For the purpose of presenting this suggestion to coal producers in the United States a pamphlet entitled "The Regional Sales Agency Plan" was prepared. This pamphlet contained the details of the plan of organizing independent selling agencies in the bituminous coal industry and included a tentative draft of a contract to be used by the producers and the selling agent. The producers who attended the New York meeting were instructed to return to their respective producing districts and explain this plan to the producers. Whether this or any similar plan was to be adopted was left to the individual judgment of the producers in each district. It was as a result of these efforts that Appalachian Coals, Inc., was formed.

Constructive Planning

The facts of the New York meeting are stressed because they illustrate the possibility of constructive industrial planning on a national scale. The experience of these coal producers evidences the fact that an intelligent body of men can deal frankly and openly with the problems of an industry and that the Sherman Act does not forbid an honest effort to remove evil competitive practices and other industrial evils. Obviously, however, there are limits to what industry may do. The Supreme Court indicated that:

"The unfortunate state of the industry would not justify any attempt unduly to restrain competition or to monopolize, but the existing situation prompted defendants to make, and the statute did not preclude them from making, an honest effort to remove abuses, to make competition fairer, and thus to promote the essential interests of commerce. The interests of producers and consumers are interlinked. When industry is grevously hurt, when producing concerns fail, when unemployment mounts and communities dependent upon profitable production are prostrated, the wells of commerce go dry."

In accordance with the suggestions made at the New York meeting, 137 producers of bituminous coal in the producing districts lying in Virginia, West Virginia, Kentucky and Tennessee agreed to organize a common exclusive selling agency. Each of these producers entered into a contract with the selling agency known as Appalachian Coals, Inc. Under the terms of each of these contracts, the selling agency undertook to use its best efforts to sell all of the coal produced by each producer "at the best possible prices obtainable." Subject to this contractual limitation, the selling prices were to be determined by the selling agency.

Four Essential Facts

The Supreme Court held that this contract was not illegal. Its conclusions, however, must be viewed in the light of four essential facts, namely, that:

1. Appalachian Coals, Inc., was formed, pursuant to a controlling and lawful purpose, that is, it was formed to correct evil competitive practices in the coal industry and not to restrain or monopolize trade;

2. Appalachian Coals, Inc., does not have the power to fix or control the price of bituminous coal in any market in which it will sell;

3. Under the provisions of the uniform contract between the producers and the selling agency, the selling agency was bound to use its best efforts to sell all the coal produced by the producers "at the best possible prices obtainable." The "best possible prices obtainable" was intended to mean the market prices. The effect of the contract was therefore to obligate the selling agency to sell as much coal as it could at the market price which it could not control. This insured a price established in a competitive market;

4. The question of a limitation of production was not involved in the case for the reason that the main purpose of the agreement was to sell more coal and the selling agency was specifically obligated to sell as much coal as the market would absorb.

Artificial Distinction

This case should prove of practical importance to small units in industry. It has finally removed the artificial distinction long thought to exist between combinations which are corporate in form and combinations which are held together by contracts or agreements. Prior to this case, it was thought by many that a corporate consolidation or merger might escape the condemnation of the Sherman Act but that a combination in the form of an exclusive selling agency might not. The result was that those companies having sufficient financial strength could integrate by corporate merger or consolidation. The smaller and more poorly financed units were unable to effect the economies incident to corporate integration and as a consequence were at a distinct disadvantage. The Supreme Court, however, rejected the artificial distinction between corporate consolidations and common selling agents and clearly indicated the test of legality was not the form of the combination but whether the effect of its acts was to restrain or monopolize interstate commerce. In refusing to follow the distinc-

(Continued on Page 30)

More Discrimination Against Oil Pipe Lines as Proposal for Divorcement Loses Support

WASHINGTON, D. C., Apr. 17.—Although Secretary of the Interior Harold L. Ickes has been in Chicago over the week-end, it is reported in well-informed circles the proposal to divorce interstate pipe lines from other branches of the petroleum industry is rapidly losing whatever support it may have had here. There has been time to study the proposition more closely and those who have given more thought to the plan recently are said to have become definitely persuaded there is nothing constructive in the proposed change from existing practices.

The administration is sincerely anxious to help all legitimate business and it is realised nothing constructive can be accomplished by a tearing down process or one which seeks to take away from a branch of the oil business a part of its plant facilities. The Congressional report on the subject aptly terms pipe lines a vital part of the plant facilities of the business of integrated companies.

Efforts to ascertain here any benefits which might accrue to any branch of the petroleum industry through divorcement of interstate pipe lines have proved futile. Those who thought at first "it might be a good thing" admit they had not given the matter much thought and, occasionally, there seemed to be an undercurrent of feeling that because some pipe lines had made money they should be divorced from other branches of the business. However, such reasoning, even on the surface, is too ridiculous for consideration and that reason is not heard any longer. It is entirely too evident business conditions throughout the nation would become even worse than they have been were a policy pursued of trying to handicap those concerns which are showing a profit on operations.

This question arises again, however, in consideration of the bill introduced in the House today by Rep. E. W. Marland, of Oklahoma, former head of the Marland Oil Co. of Ponca City, Okla. That bill, designed to raise revenue, would compel crude oil pipe line companies to file separate income tax reports and provides for discriminatory taxes.

The bill provides that in lieu of the income tax provided in Section 13 a corporation engaged in the transportation of crude petroleum and liquid products thereof by pipe line shall be subject to an income tax equal to 75 per cent of its net operating income above 10 per centum of its earnings on its unamortized investment. It also prohibits pipe line companies to file consolidated returns with any other corporation.

It is just like asking the railroads to file separate income tax reports on their freight business and their passenger business. It is claimed the railroads make a profit on handling freight and lose money on carrying passengers. Or, if a grocery store happens to make a profit on its meat department and loses money in another department, according to the Marland plan that grocery store should file a separate income tax return on the meat department. Pipe lines are part of the plant facilities of integrated oil companies, just as the meat department is part of the facilities of the grocery store and as the passenger and freight departments are part of the facilities of the railroads. There is no more reason or logic why pipe lines should file separate income tax returns than there is for separate returns to be filed by different departments of a grocery store or of a railroad.

If operations of oil companies as a whole had been profitable and on a paying basis, as should be the desire of every person in the nation anxious to see a re-establishment of business on a normal basis, such a bill probably never would have been introduced into Congress. It seems like a mighty poor time and policy to endeavor to further handicap a business so vital to the welfare of the nation as the petroleum industry.

Oil Men, Associations and Representative of the Railroads Agree on Text of "Hot" Oil Bill

By CHARLES E. KERN
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Apr. 14.—In order to get prompt action in this special session of Congress all groups of the oil industry, except that small contingent represented by John B. Elliott who came to the oil conference representing the Independent Petroleum Producers of California, got together here yesterday and today and have agreed upon a bill aimed at the destruction of the hot oil racket by the control of transportation necessary to remove such illegal oil from states in which it is produced.

When the Capper bill was introduced in the Senate it was realized that it covered policies not germain to the hot oil racket. The Capper bill was prepared by Louis Titus, counsel of the Independent Petroleum Producers of America. Representatives of the American Petroleum Institute, headed by Judge C. B. Ames, president, came here and after a conference with representatives of the Independent Petroleum Producers of America, called on Senator Capper and later with all groups of oil interests agreed on a bill introduced in the House of Representatives today by Representative E. W. Marland.

Marland Hot Oil Bill

This bill, in full text, follows:

"A bill to aid the states in the conservation of crude petroleum and to prevent the transportation in interstate and foreign commerce of crude petroleum which has been unlawfully produced.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.

"Section 1. It shall be unlawful for any person, firm, or corporation to ship or cause to be shipped by rail, pipe line or any other means of conveyance from a place in a state or territory through or to a place in another state or territory or in any foreign country crude petroleum the production or shipment of which is contrary to or in violation of any statute of any state or territory in which such petroleum is produced purporting to relate to the conservation of crude petroleum or contrary to or in violation of any rule, regulation or order of any board, commission, officer or agency of such state or territory purporting to relate to the conservation of such petroleum.

"Sec. 2. Paragraph 4 of Section 1 of the Act to Regulate Commerce, as amended, is hereby amended by adding to said Paragraph 4 at the end thereof the following:

"'Whenever laws exist in any state or territory purporting to relate to the conservation of crude petroleum, no common carrier by rail or pipe line subject to the provisions of this act shall receive for transportation or transport from a place in such state or territory through or to a place in another state or territory or in any foreign country, any crude petroleum whatsoever unless prior to or at the time such crude petroleum is tendered for such transportation the shipper or his agent shall furnish to such carrier an affidavit of such shipper or agent in substance and to the effect that no part of such crude petroleum so tendered to such carrier was produced, or if so produced is shipped, contrary to or in violation of any statute of the state or territory from which said transportation is to be made, purporting to relate to the conservation of crude petroleum, or contrary to or in violation of any rule, regulation, or order of any board, commission, officer or agency of said state or territory, purporting to relate to the conservation of such petroleum, and every such carrier shall be free from liability and penalty under this act and under any such statute, rule, regulation or order, for or on account of receiving or transporting such crude petroleum, if the delivery thereof to said carrier be preceded or accompanied by the delivery of such affidavit. Such affidavit shall otherwise be in such form as may be prescribed by state authority and shall be subject to inspection upon request of such state authority or the Interstate Commerce Commission. Provided, however, that common carriers by rail subject to this act may receive from other common carriers by rail for such transportation and may so transport any crude petroleum without requiring such affidavit and shall not be subject to any liability or penalty for or on account of so receiving or transporting the same.'

Penalties Provided

"Sec. 3. Any individual who violates any of the provisions of this act, or who makes any false statement in an affidavit required by Section 2 of this act, and any officer or agent of a corporation who participates in the violation of this act by such corporation, shall be subject to a fine of not less than $1,000 and not exceeding $5,000, and by imprisonment for not less than one year and not exceeding five years. Any corporation which violates any of the provisions of this act shall be subject to a fine of not less than $1,000 and not exceeding $10,000, and each violation of this act shall constitute a separate offense."

Today the oil men called on Secretary Ickes, presented their draft of this measure and it was referred to the Attorney General for his opinion, which will be forthcoming next week after Mr. Ickes returns from Chicago for which place he left late today.

The Capper bill is known as Senate 1,224, entitled an act to aid in the conservation of crude petroleum and to prevent the transportation and sale in interstate and foreign commerce of crude petroleum or the products thereof, which crude petroleum has been unlawfully produced, and provides as follows:

The Capper Bill

"That (1) it is hereby declared to be the policy of Congress to protect and conserve the oil supplies of the United States for the present needs and the future necessities of the Nation, and to prevent waste in the production and use of such oil, and to that end to prevent the transportation in interstate and foreign commerce of oil in excess of the reasonable market demand therefor or produced

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Constitutionality of Proposal to Ban "Hot" Oil From Interstate Transportation Is Argued

WASHINGTON, D. C., Apr. 17.—A brief maintaining the constitutionality of the proposal to bar "hot" oil from interstate transportation was prepared by Lewis Titus of Texas and submitted to the Committee of Fifteen at the Washington conference and accessible to Secretary Ickes for presentation to President Roosevelt:

Mr. Titus' brief cites U. S. Supreme Court decisions bearing on this subject come under three heads, those that show constitutional power forbidding the transportation in interstate and foreign commerce of oil produced in violation of the laws of the state where produced; those in which Congress has the constitutional right to appoint a commission or conservator with power to make regulations to prevent waste in the production of oil and with power to prevent the shipment in interstate commerce of oil produced in violation of such regulations and those in which Congress has the power to prohibit the transportation in interstate commerce of articles which are not in themselves harmful, if, in the opinion of Congress, the general welfare would be served by prohibiting the entry of such articles into interstate commerce.

Chief Justice Taft upheld the act of October 29, 1919, prohibiting the transportation in interstate or foreign commerce of stolen motor vehicles and provided a penalty in case the transporter had knowledge that the motor vehicles were stolen. The case of Rupert against the United States upheld the constitutionality of the act passed May 25, 1900, prohibiting the transportation in interstate commerce of any birds or animals killed in violation of the laws of the state where killed.

The United States has a vital interest in the petroleum supplies of the nation, not only for the immediate needs of its people but for the future necessities of the nation.

"To that end," declares Mr. Titus, "it is a matter of the greatest public concern that the oil supplies of the United States be conserved and that waste should not be permitted. Wherever there is a question of public welfare involved, Congress has the power to regulate interstate commerce in interest of such public welfare."

In line with the latter decision is the law on the lottery case which the Supreme Court held to be constitutional and which prohibited the transportation of lottery tickets in interstate commerce.

Power of Congress

The third class of cases cited by Mr. Titus are particularly applicable to the legislations proposed by the Committee of Fifteen in that they show that Congress has been upheld by the Supreme Court of the United States in exercising the power to prohibit the transportation in interstate commerce of articles which are not in themselves harmful, if, in the opinion of Congress the general welfare would be served by prohibiting the entry of such articles into interstate commerce.

"As example of the foregoing principle is the prohibition of shipments in interstate commerce of wild game killed in violation of the laws of the state where killed," says Mr. Titus. "There is nothing harmful in the game itself and no harm could come to the people of the state into which the game was shipped, but it was considered by Congress to promote the welfare of the public generally to prohibit unlawfully killed game from entering interstate commerce, and therefore the act was upheld.

"Another example is the commodities clause of the Hepburn Act which prohibits the transportation in interstate commerce by a railroad of any coal which is mined and owned by that railroad. The coal is not harmful in itself nor can it do any possible damage to the people of the state to which it is shipped. On the contrary, it might be of great use and benefit to such people. Nevertheless, Congress provided by law that railroads should make no discrimination in rates, but that for the same service every person should be charged the same rate. Congress was apparently of the opinion that if a railroad owned coal mines and operated those mines and then shipped its coal over its own road in interstate commerce that it might make a delivered price on that coal so low as to be a hardship upon all other producers . . .

"So in the case we are considering as to whether Congress has the power to appoint a commission or conservator which may issue regulations for the production of oil in the various states in order to prevent waste, and whether it has the power to prevent the shipment in interstate commerce of such oil produced in violation of such regulations, we must take into consideration the fact that the nation has a vital interest in the conservation of the oil supplies of the United States.

"The supply of oil is limited. It is exhaustible. It cannot be replaced. The very existence of the nation might, at some future time, depend upon an adequate supply of oil within the boundaries of the United States. There can be no greater public interest to be served than prevention of the waste of our oil supplies. Congress therefore, if it so chooses, has the right in order to protect the nation, and to promote the welfare of its citizens, to prohibit the transportation in interstate commerce of oil, produced in violation of the regulations of its own officers, which regulations would be designed to conserve the supply of oil for future necessity."

Child Labor Case

The child labor law is the case relied upon by opponents of the theory that Congress has power to regulate or prohibit interstate commerce merely on account of the general public good, but an analysis of that case," declares Mr.

(Continued on Page 30)

Program for the May Meeting of A.P.I. at Tulsa; New Economic Survey to Be Presented

Agricultural alcohol as a proposed blend with gasoline will be discussed before the marketing division of the American Petroleum Institute at its mid-year sessions in Tulsa on May 17, 18 and 19. The subject has been widely discussed and uncertainties as to the practical and economic consequences of such a radical change in the nation's motor fuel have resulted in numerous studies and surveys. Dr. George Granger Brown of the University of Michigan, who has given much time to study of the proposals, will be the speaker on Thursday morning, May 18, at 10 o'clock.

At the same session two other problems of vital concern to the petroleum and motor vehicle industries will be considered. A. J. Brosseau, president of Mack Trucks, Inc., will present a paper on "How Truck Legislation Affects the Truck Manufacturers and the Oil Companies," and Sidney Swensrud, assistant to the president of the Standard Oil Co. of Ohio, will discuss "Gasoline Taxation and Its Effect on Consumption."

On Wednesday, May 17, 34 working committees of the organization, including the board of directors, will hold meetings.

The only general meeting to bring together the three divisions, marketing, refining and production, will be held Thursday afternoon at 2 o'clock, when C. B. Ames, president of the Institute, will deliver his mid-year address. H. T. Klein, chairman of the American Petroleum industries committee formed following the annual meeting at Houston last November, will offer a progress report on the work accomplished in combating gasoline tax evasion and in co-operating with other agencies in opposition to increasing taxation.

Warren A. Sinsheimer, chairman of the subcommittee on refinery statistics and economics, will deliver the mid-year "Statistical Survey and Economic Forecast of the Refinery Situation" before the general assembly. The committee has been at work since the first of the year and already has made one survey forecasting probable demand for motor fuel to June 1. The report to be delivered at Tulsa will review trends during the early months of the year and offer estimates of probable demand for the next three months.

A joint meeting of the refining and marketing divisions on Friday morning will consider range oil burners, and liquid asphalt materials for low cost roads both from the public and the producer standpoints, and Diesel fuels.

In addition to the customary division meetings a session on fire and accident prevention has been arranged for Thursday evening at 8 o'clock. C. L. Hightower of the Texas Pacific Coal & Oil Co., Fort Worth, Tex., will present a paper on "The Compensation Insurance Problem," and George F. Prussing, Union Oil Co., Los Angeles, will make a consolidated report for six California companies on "Earthquake and Fire Protection." General discussion of fire and accident prevention problems of 1933 will follow.

The program for the Tulsa meeting to be held at the Mayo Hotel follows:

PRELIMINARY PROGRAM

Thursday, May 18—9:30 A. M.

PRODUCTION DIVISION

(Mezzanine Floor—Junior Ballroom)

Well Spacing.

Presiding: Fred E. Wood, Standard Oil Co. (Indiana).

"Determination of Permeabilities and Pressure-Gradient Curves Through Adjusted Flow of Wells."
H. D. Wilde, Jr., and T. V. Moore, Humble Oil & Refining Co.

"Approximate Comparative Ultimate Yield With Varied Well Spacings."
Fred E. Wood, Standard Oil Co. (Indiana).

"The Mechanics of Flow of Oil-Gas Mixtures Through Vertical Pipes."
James E. Gosline, University of California.

10:00 A. M.

REFINING DIVISION

(Sixteenth Floor—Crystal Ballroom)

Dewaxing.

Presiding: R. T. Haslam, Standard Oil Development Co.

"Centrifuge Dewaxing with Trichlorethylene."
C. F. Pester and E. W. Luster, Standard Oil Development Co.

"Solvent Dewaxing of Oils with Benzol and Acetone."
F. X. Govers and G. R. Bryant, The Texas Company.

"Dewaxing Oils in Propane Solution with Self-Refrigeration."
W. H. Bahlke, R. N. Giles and C. E. Adams, Standard Oil Co. (Indiana).

"Laboratory Control of the Quality of Paraffin Distillate."
L. L. Davis and D. S. Campbell, Continental Oil Co.

10:00 A. M.

MARKETING DIVISION

(Sixteenth Floor—Banquet Hall)

Marketing Problems.

Presiding: W. S. S. Rodgers, The Texas Company.

"Agricultural Alcohol."
George Granger Brown, University of Michigan.

"How Truck Legislation Affects the Truck Manufacturers and the Oil Companies."
A. J. Brosseau, Mack Trucks, Inc.

"Gasoline Taxation and Its Effect on Consumption."
Sidney Swensrud, Standard Oil Co. of Ohio.

2:00 P. M.

GENERAL SESSION

(Sixteenth Floor—Crystal Ballroom)

Production, Refining and Marketing.

The President's Address.
C. B. Ames, American Petroleum Institute.

"Progress of the American Petroleum Industries Committee."
H. T. Klein, The Texas Company.

"A Statistical Survey and Economic Forecast of the Refining Situation."
Warren A. Sinsheimer, Henry L. Doherty & Co., (for the Institute's Committee on Refinery Statistics and Economics.)

8:00 P. M.

SESSION ON FIRE AND ACCIDENT PREVENTION

(Mezzanine Floor—Junior Ballroom)

Fire and Accident Prevention.

Presiding: C. W. Smith, Standard Oil Co. (Indiana).

"The Compensation Insurance Problem."
C. L. Hightower, Texas Pacific Coal & Oil Co.

"Earthquake and Fire Protection"—A consolidated report of six California companies. Presented by George F. Prussing, Union Oil Co. of California.

"Fire and Accident Prevention Problems of 1933."
General Discussion.

Friday, May 19—9:30 A. M.

PRODUCTIION DIVISION

(Mezzanine Floor—Junior Ballroom)

Drilling and Production Practice.

Presiding: H. N. Marsh, General Petroleum Corp. of California.

"The Application of Liquid Jet Pumps to Oil Well Pumping."
M. P. O'Brien, University of California.

"Study of Bottom Hole Samples of East Texas Crude."
Ben E. Lindsly, U. S. Bureau of Mines.

"Study of Subsurface Pressures and Temperatures in Flowing Wells in the East Texas Field and Application of These Data to Vertical Flow and Sand Performance."
C. E. Reistle, Jr., U. S. Bureau of Mines.

"Results of the Institute's Research Project on Origin and Environment of Source Sediments."
Parker D. Trask, U. S. Geological Survey.

10:00 A. M.

REFINING AND MARKETING DIVISION

Joint Session—(Sixteenth Floor—Crystal Ballroom)

Utilization.

Presiding: J. B. Rather, Socony-Vacuum Corp.

"The Range Oil Burner—Creator of a New Oil Market."
L. F. Speare and C. B. Cooley, Gilbert & Barker Manufacturing Co.

"Specifications for Liquid Asphaltic Materials for Low-Cost Roads."
E. F. Kelley, U. S. Bureau of Public Roads.

"Liquid Asphaltic Road Materials from the Producer's Standpoint."
Prevost Hubbard, The Asphalt Institute.

"Ignition Quality of Diesel Fuels."
A. G. Marshall, Shell Oil Co.

2:00 P. M.

PRODUCTION DIVISION

(Mezzanine Floor—Junior Ballroom)

Proration and Production Practice.

Presiding: W. K. Whiteford, Barnsdall Oil Co.

"The Relation of Price to Proration."
Speaker to be announced.

"Economic Benefits of Proration."
E. H. Griswold, Continental Oil Co.

"Labor Proration."
Speaker to be announced.

"Survey of Special Alloys for Use as Tubing and Working Barrels in the Gulf Coast."
W. F. Rogers, Gulf Production Co.

2:00 P. M.

REFINING DIVISION

(Sixteenth Floor—Crystal Ballroom)

Cracking.

Presiding: R. E. Wilson, Standard Oil Co. (Indiana).

"A Modern Experimental Cracking Unit."
W. W. Gary and J. T. Ward, M. W. Kellogg Co.

"The Cracking of Mid-Continent Virgin Gas Oil Over a Wide Range of Temperatures and Pressures."
P. C. Keith, Jr., J. T. Ward and L. C. Rubin, Gasoline Products Co.

"Developments in Naphtha-Reforming Practice for Octane Number Improvement."
H. W. Ferguson and E. J. Leroi, Humble Oil & Refining Co.

"Cracking Light and Heavy Oils."
Edwin F. Nelson and Gustav Egloff, Universal Oil Products Co.

2:00 P. M.

MARKETING DIVISION

(Sixteenth Floor—Banquet Hall)

Marketing Problems.

Presiding: C. G. Sheffield, Standard Oil Co. of New Jersey.

"Has the Code Accomplished Its Purpose?"
W. H. Ferguson, Continental Oil Co.

"Meeting the Requirements of Our Customers."
M. J. Norrell, Magnolia Petroleum Co.

"The Credit Factor in the 'New Deal'."
W. C. Wenzel, Richfield Oil Corp. of New York.

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"Q" Brand of Ethyl Compound To Be Offered Licensed Refiners and Marketers June 1

By W. T. ZIEGENHAIN

The decision of the Ethyl Gasoline Corp. to offer a "Q" brand of lead to licensed refiners and distributors of Ethyl Gasoline came, no doubt, after considerable investigation of all factors of a technical and economic nature. However, the decision was a surprise to many who thought that the opposition offered a similar proposal nearly a year ago had caused the plan to be permanently shelved.

Refiners in the Mid-Continent, most of whom have not greatly extended cracking and reforming operations, were, in general, favorably impressed with the decision. They view this offer as a means whereby they may build up the octane value of their house brands of gasoline immediately to meet the competition of refiners who have built such units.

In most instances the larger refiners who hold licenses for the sale of Ethyl Gasoline and who have built extensive reforming equipment are hesitant about making definite statements and no doubt feel that the new proposal gives the "less up-to-the-minute" plant an almost equal footing and that much of their advantage has been removed from them, at least temporarily.

Refiner's Problem

The further consideration of the idea resolves itself into a study of the relative cost of reforming and adding lead in the case of each refinery set-up and there will not be two cases that are exactly alike. Before this is discussed here, however, it is preferred that the terms of the new contract be enumerated as this will aid in understanding the true range of the new problem placed before refiners. Also, in discussing the effect of these provisions within the contract, the statements are necessarily broad and general.

Limited Sale of "Q" Brand

The Ethyl Gasoline Corp. extends the use of the "Q" brand of lead only to those refiners and marketers who hold contracts for the sale of Ethyl Gasoline. In this list are practically all of the major refining and marketing companies and the volume of their "regular grade" sales represents the bulk of the total volume of motor fuel consumed in the United States.

There has been no question of their success in the sale of Ethyl Gasoline as premium fuel over the years it has been offered. The marked uniformity of quality and the protection thrown around the licensee for maintaining quality has gone far to give weight to this second proposal in the eyes of the industry.

However, under the strain of general economic conditions the sale of Ethyl Gasoline as well as all "premium" products has lessened. The extent of this decrease has varied greatly among the different companies. Also, in some cases the decrease is not entirely accounted for by the depressed business so much as because they have chosen to build up the octane value of their particular "house" brands to a point where they had less to offer in the Ethyl Gasoline for the premium charged.

The only defense for this rather costly program so far as the refiner was concerned has been in his efforts to hold the gallonage that was fast slipping away in favor of the third grade.

Ethyl Gasoline has had to bear the brunt of the growing popularity of the third grade even though it could not be said to be competitive with it.

Only in Second Grade

As may be seen in the accompanying summary of provisions in the "Q" contract, the fluid must be used only in the second grade of motor fuel sold. This is significant because it gives the refiner and marketer another tool with which to fight competition from the third grade. In other words, the sale of house brands has suffered because of competition offered by the third grade on a price basis alone. Now, with all Ethyl Gasoline licensees able to use lead in their second grade the average quality of these should be improved and the public might be led away from the third grade on the basis of quality.

The various companies who have developed house brands have attempted to do this and when each new gasoline was placed on the market there was an immediate response from the buying public but this cooled as time went on and the net result was often a decrease in the profitable sale of the premium grade and no permanent replacement of the third grade volume.

However, if a general adoption of the use of ethyl fluid is made by those refiners who are not now in a position to put out a 68 or 70 octane house brand and the quality of the second grade of motor fuel is brought up to a standard out of reach of any third grade motor fuel, it might fall into general disrepute. The success of such a program, however, must await time.

Optional in House Brands

The contract provides that the fluid be used in part or all of the refiner's "regular" brands. This removes the objection that a refiner might have to alter his present house brand of gasoline, but gives him the right to offer a leaded second grade if the market demands it. It also leaves a way open to the refiner or marketer who is undecided about accepting the "Q" agreement until its trial has proved its advantage.

To some this provision might mean a fourth grade of gasoline to be offered through the station but this will probably be made on a trial basis only and will be limited to a few stations where the progress of sales will be carefully watched.

Cost of Compound

Under the terms of the proposed agreement the compound is to cost .35 cent per cubic centimeter and the royalty charge will be .05 cent per gallon. The quantity of compound to be used must lie within a range of .3 to 1.5 cubic centimeters per gallon. The cost to the refiner will thus range between .155 cent and .565 cent per gallon of blended motor fuel.

In studying the use of lead the refiner is first concerned with what octane value his competitor will make his regular grade of motor fuel. If it is to contain the new "Q" compound, he knows 70 octane is the limit. This is also higher than the house brands now on the market. With this as a basis, his next problem is to find out whether his base fuel has a high enough knock rating so that 1½ c.c. of the fluid will bring it up to 70 under the motor method of test. Because of the difference in lead suceptiveness among gasolines made from different crudes and made by various cracking procedures, and because there has been a change in the method of making the knock test which has not affected all gasolines alike, the question is not so readily answered. Refiners are now in the process of testing blends of their gasoline with varying amounts of ethyl fluid to determine whether 1½ c.c. will suffice.

A few reports have indicated and the opinion of refiners who have given thought to their particular conditions have indicated that in the Mid-Continent an average blend of straightrun and cracked gasolines containing natural gasoline in a normal yearly average volume and with the blend having an octane number of 62 under the motor method that 1½ c.c. of the compound will bring the octane value of the fuel to 70. However, when stating the octane value here at 62 on the basis of the motor method it means that the base gasoline must have an octane value of 65 to 67 on the old research method.

This is higher than the average of the regular grade of gasolines now sold from Mid-Continent refineries so if those who are not able to produce a regular grade sufficiently high in octane value wish to compete on the basis of a 70 octane for the blend, they will still find it necessary to add cracking equipment.

Also, aside from the limit placed upon the quantity of "Q" compound that may be used, there is an argument as to how far it will pay to add cracking equipment or reform to accomplish the same end.

Comparisons of this nature have been made by several companies for their own operating conditions and for their existing equipment but each plant apparently presents its own problem. Generally speaking, the opinion is given that an extension of cracking can be justified in most refineries to advantage but that after the gasoline is brought up to a certain octane value it is cheaper to add "Q" compound from there on.

An example that is thought to be typical of the condition in which the average Mid-Continent refiner finds himself follows. He is producing a 60 octane gasoline as a blend of straightrun, cracked and natural gasolines. He has reduced the endpoint of his production to an economic limit considering a normal selling price for kerosene. He has made such changes in his cracking furnaces and method of operation that he can not look for much help from the existing cracking equipment. He does have some flexibility in the quantity of natural gasoline blended which usually aids in building up octane value but this can not be the solution. A study of his problem will probably indicate that he can most economically build up the octane value of his gasoline to 64 or 66 by installing additional cracking equipment and to increase the octane value beyond that he can do it most economically

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Summary of Provisions in Ethyl "Q" Contract

The product offered will be known as "Q" brand of antiknock compound. Sale of the leaded gasoline may commence on June 1 next.

"Q" brand of antiknock compound will be offered to holders of Ethyl manufacturing or nonmanufacturing agreements and the leaded fuel may be sold to jobbers holding a license for such sale.

"Q" brand of antiknock compound is to be mixed only with gasoline to be sold at a price next highest to Ethyl Gasoline—this grade being generally defined as "regular gasoline."

The compound may be used in all or part of refiner's "regular" brand.

The price of the compound will be .35c per cubic centimeter of lead plus a gallonage charge of .05c per gallon.

The minimum quantity of tetraethyl lead which may be mixed with gasoline will be .3 (three-tenths) of a cubic centimeter per gallon, and the maximum 1½ (one and one-half) cubic centimeters.

Minimum specifications for the base gasoline with regard to volatility, gum and sulphur will be similar to those for Ethyl gasoline.

The maximum antiknock value of the treated gasoline containing "Q" brand of antiknock compound will be 70 octane as determined by the C. F. R. Motor Method. This maximum may be raised when authorized by us.

The fluid will be colored in accordance with the wishes of each individual licensee, any distinctive color except red being supplied.

A uniform metal warning plate is to be affixed to each pump from which the leaded fuel is dispensed, same being 7" wide by 6" in height and containing the following:

For Use As A
Motor Fuel Only
Contains
LEAD
(Tetraethyl)

The Ethyl name or trade-mark or the "Q" brand or trade-mark is not to be used in advertising or offering this leaded gasoline for sale.

Gulf Coast's Oilless Oil Field Sees Hottest Lease Play of Any Wildcat Area in the District

By NEIL WILLIAMS

HOUSTON, Tex., Apr. 17.—The Tomball-Huffsmith area of northern Harris County has been appropriately dubbed the Gulf Coast's "oilless oil field." Although so far not a barrel of oil has been produced there, the activity and values established in lease and royalty trading and the development program under way or planned have been those of a newly opened boom field. The expectation of proving up a good pool has been so strong that a special hearing of would-be operators in the area already has been held before the State Railroad Commission to unitize the acreage, limit drilling and provide well-spacing regulations.

This is the first instance on record in which an effort has been made to place the hand of proration control on an area before production of any kind has been found. It has been felt necessary in this case because the play includes the Tomball townsite, which is subdivided into numerous small tracts, and a large part of the acreage surrounding the townsite is made up of little truck farms. If oil were uncovered an orgy of wasteful drilling probably would follow without the pooling of much of the land and it is easier to do this now rather than after. Even now several independents have taken out permits for locations on these small tracts.

The play has been the "hottest" and most intensive lease and royalty activity ever witnessed in any strictly wildcat area on the Gulf Coast, and it is one of the few coastal plays of any kind in which so many different companies, operators and independent lease traders have been able to get in on a competitive basis. Prices of acreage and royalties have been run up to those of proven territory. The intensive leasing has covered an area of 20 to 25 square miles, extending across not only northern Harris County but well up into Montgomery County.

Boom Town Merchants on Ground

Already even the customary boom town merchants and others have been coming in from Conroe and other fields seeking sites for business and to be in on the ground floor of the development. The drilling of several deep dry holes within recent months has not seemed to kill the interest in the prospects because most everyone says the field is there—all that remains to be done is to find it.

While the area still is the most active spot on the coast, the acreage now is being centralized in hands which will hold it and develop it. Included are such companies as the Magnolia Petroleum Co., Humble Oil & Refining Co., Gulf Production Co., The Texas Company, Stanolind Oil & Gas Co., Standard Oil Co. of Kansas, Kirby Petroleum Co., Mills Bennett Production Co., United Gas Co. and others.

Out of all this play has arisen the question of "What is it all about?" In view of the fact that there has been no production, a sort of mystery has prevailed, with each fellow feeling the others know something he does not and that he ought to get in regardless of cost. The chief puzzle is why the companies are willing to pay such high acreage prices when apparently all in the world there is to go on is some showings of gas in a wildcat drilled by the Indian Hill Oil Co. last year.

The Indian Hill Oil Co.'s test, No. 1 Schweinle, located in the William White Survey at Huffsmith, encountered showings of gas in a broken sand and shale formation at a depth of 5,514-80 feet in the Cockfield, the same horizon from which the Conroe Field is producing. A drill stem test was made with reports of the estimated volume ranging from several hundred thousand feet to 2,000,000 feet daily. Following the showings, the Mills Bennett Production Co., one of the leading independent producing companies on the Gulf Coast, became interested in the test and assisted in carrying the hole on down to "look at the bottom." In November, after going to a total depth of 6,110 feet, the test was abandoned.

Lease Play Begins

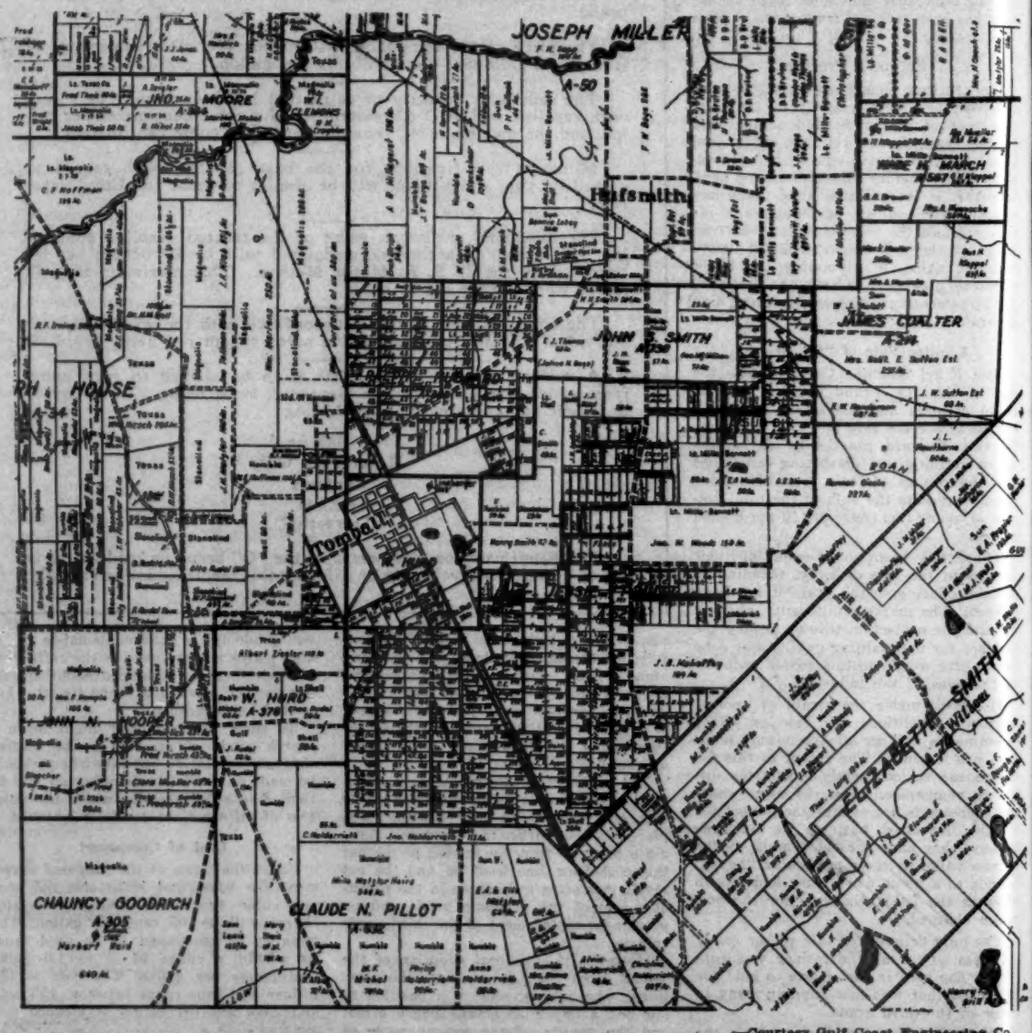
The present lease play dates from that time. Then, lease prices were nominal with acreage surrounding the Indian Hill block available around $2.50 to $5 or possibly $10 an acre. The Indian Hill Oil Co. held a block of several thousand acres but the Gulf Production Co., United Gas Co., Kirby Petroleum Co., Mills Bennett Production Co. and a few independents went in and obtained some acreage. About the same time the Mills Bennett Production Co. made a deal with the Indian Hill Oil Co. for a portion of the latter's block comprising between 2,000 and 2,500 acres and agreed to drill a 6,000-foot test. Also about the same time the Humble Oil & Refining Co. went into the Tomball district several miles southwest of the Huffsmith test and did some shooting work which was followed by the blocking up of more than 8,000 acres adjoining an old block owned by the Magnolia Petroleum.

When the Mills Bennett Production Co. shortly afterward started drilling on its test, No. 1 Klepple, located in the March Survey, 3 miles to the south and west of the Indian Hill well, the general lease play began in earnest. Land prices skyrocketed, and when the Stanolind Oil & Gas Co., a Standard Oil Co. (Indiana) subsidiary and a "newcomer" to the production end on the Gulf Coast, came along and paid as high as $150 an acre attention became centered on the area more than ever before. Since then prices have mounted still higher, with some trading done at $200 and $250 per acre, and in the last week it was reported one of the major companies had offered $350 cash per acre and an overriding royalty for one tract.

Beginning of Story

Although the encountering of gas showings in the Indian Hill test was an incentive for the starting up of the intense leasing play, it was just one of numerous circumstances responsible for the importance placed upon the district. Back of it all is a story dating back several years, in which geophysical findings, favorable geological evidence of some kind of structural condition, location along that trend of play which has given birth to Conroe and several other good fields and prospects within recent years, and accessi-

Tomball-Huffsmith Area of Northern Harris and Southern Montgomery Counties



—Courtesy Gulf Coast Engineering Co.

Here the Gulf Coast's most active wildcat lease and royalty play has been, and still is under way. The map shows the more recent tests abandoned or started drilling since the active play got under way

bility all have combined to make the area one of the most attractive on the Gulf Coast. Then, at the opportune moment, with the discovery and development of Conroe fresh in the minds of everyone, and with so much attention being directed at the Gulf Coast, which was pictured as the industry's land of milk and honey, along came the gas showings in the Indian Hill well, and the race was on. Thus the active leasing and the unusually high wildcat acreage prices are not without foundation, although many of the conservatives still are of the opinion that many hands will be burnt and disappointments may be many.

The periodical interest directed toward the area generally had its beginning in May, 1929, when the Vacuum Oil Co. became attracted to that district after study of old scattered holes drilled in northern Harris County, and went in with torsion balance which gave slight indication of some unusual subsurface condition with a possible "high" located in the J. M. Hooper Survey. In December of the same year the company reworked the district with a seismograph and shot what was believed to be a salt lead a little farther north of where the torsion balance picture showed a high. The evidence pointed to three peaks on a common big "high." Following this the company started leasing and acquired a block centering around the Joseph House and the Hooper Surveys. Three other large companies did some shooting there, checking almost exactly the findings of the Vacuum Oil Co. This was the first instance on record in which the shooting of four different companies coincided.

Quiet Till Summer of 1932

No drilling was done and the area lay quiet until last summer when the group comprising the present Indian Hill Oil Co. obtained a block of roughly 3,500 acres centering in the William White Survey at Huffsmith, which is some 6 miles or more to the northeast of the Tomball block leased by Vacuum Oil Co. The same group originally had been interested in Conroe before production was found there. The first test was the No. 1 Schweinle. This topped the Hockleyensis at approximately 4,560 feet (4,410 feet subsea) as nearly as could be determined, which was reported as running above normal. Going deeper, the test picked up the Cockfield between 5,450 and 5,500 feet and from 5,514 feet on down to 5,580 feet it had showings of gas. As the Cockfield is the producing horizon of Conroe, which is less than 20 miles to the northeast along the same trend, the showings were of more than usual interest. Although from 500 to 600 feet lower than at Conroe, the well was considerably down dip and, although there was little to correlate on except Conroe, operators considered the Cockfield at that depth was high.

It was at this time that the Mills Bennett Production Co. entered the picture, as well as the Gulf Production Co., the United Gas Co. and a few others. Mills Bennett, after helping to drill the Schweinle test on down to 6,110 feet, where it was abandoned, acquired a portion of the Indian Hill block located south and west of the test, and with some additional acreage purchased, had a block of more than 3,000 acres.

In the meantime, Humble Oil & Refining Co. had gone back into the Tomball district southwest of the Huffsmith test of the Indian Hill Oil Co. and by shooting around the old Vacuum block, which had been taken over by the Magnolia Petroleum Co. following the Vacuum-Standard Oil Co. of New York merger, pictured a dome or structure much larger than that originally shown and extending some distance south of the Vacuum-Magnolia block. It immediately began leasing and rapidly acquired a large block adjoining the Magnolia block.

Since then the Shell Petroleum Corp., The Texas Company and Stanolind Oil & Gas Co. have done additional geophysical work in various parts of the district. Stanolind Oil & Gas Co. entered the picture during the drilling of Mills Bennett Production Co.'s No. 1 Klepple in the March Survey. It was this company which set the pace when it began paying as high as $150 an acre, a figure unheard of before on the Gulf Coast for wildcat leases. Included in its purchase was some of Mills Bennett Production Co.'s block. Stanolind Oil & Gas Co. had a particular attraction to the area in view of the fact that its pipe line subsidiary, Stanolind Pipe Line Co., has a main trunk line running right through the district with a pump station at Huffsmith and if production were found—and the area was looked upon as unusually favorable—the company would be sitting in with substantial holdings.

Drilling development since the active play has been under way has resulted, however, in a string of dry holes. The Indian Hill test was abandoned early in November, 1932, after drilling to a total depth of 6,110 feet. Between this time and January, 1933, there was a lapse of development, which was broken by the starting up of four additional wildcats about the same time. Located about 6 miles west and some north of the Indian Hill well was Continental Oil Co. and Julius Fohs' No. 1 Rock Creek in the Joseph House Survey, southern Montgomery County. This test created interest because it was located upon the best of geological and geophysical information but it ran way below normal and was abandoned late in January as dry at 5,720 feet. It topped the Hockleyensis at 4,547 feet (minus 4,380 feet).

Another One Dry

Mills Bennett Production Co.'s No. 1 G. H. Klepple, March Survey, Harris County, approximately 3 miles south and west of the Indian Hill well, also was started about the same time as the Continental well. It topped the Hockleyensis at 4,656 feet (minus 4,473 feet), which, considering the dip, ran about normal with the Indian Hill well. It was carried to below the contract depth to 6,017 feet and abandoned as dry.

Approximately 3 miles to the northeast of the Continental test and a little over 6 miles to the northwest of the Indian Hill well, R. L. Sprinkle drilled a test on the Rohlfs tract in the H. Prosens Survey. This test also ran low and was abandoned as dry at 5,108 feet. The fourth test was Mound Creek Oil Co.'s No. 1 Sealey in the John Sealey Survey, which is farther north of the Sprinkle test. It topped the Hockley at 3,875 feet and was abandoned in salt water sand at 5,010 feet.

Because of the failure of these tests and the large investment made in leases throughout that area, a peculiarly great importance is placed on the three wildcats now drilling. Two of these are being drilled by Magnolia Petroleum Co. on its block and the other by C. & C. Drilling Co. The latter is located on the Peden tract in the J. Brock Survey, several miles southeast of the Indian Hill test and on the extreme east edge of the lease play. The location was made by a group from San Antonio known as the Weatherall Production Co., which was recently taken over by the present operators who are prepared to carry the hole on down.

Magnolia Tests at Tomball

The Magnolia tests are located at Tomball, which is southwest of the Indian Hill well. The first, No. 1 Martens, is in the Joseph House Survey, 3 miles to the southwest of the Mills Bennett dry hole. It was in the Joseph House Survey that geophysical indications of a salt dome high were given. Three miles farther south and a little to the west, Magnolia is drilling its No. 1 Kobs, located in the lower J. M. Hooper Survey. This is on what was pictured as another high spot.

So far nothing has been done with the several locations in the townsite. Permits for these were taken out several weeks ago by independents and no indication has been given by them whether the locations will be drilled in the immediate future.

A number of wildcats were drilled over northern Harris County and southern Montgomery County previous to the present activity. The majority of these, however, were what would now be considered shallow. There is a record of some drilling as far back as 20 years ago when wildcatters considered that district favorable. One test was drilled to a total depth of 3,026 feet on a location just north of Tomball. More recently Humble Oil & Refining Co. drilled, in 1931, a deep test on its Magnolia block, which is in southern Montgomery County just northwest of where the present interest is centered. That test, No. 1 Renn, S. J. McFarland Survey, was abandoned as dry at 5,420 feet. Lowrie and Young, who have a block just north of this district, and who did considerable core drilling on it, have drilled two deep dry holes within the past two years. This block is centered in the T. J. Nichols Survey.

In the past, however, virtually all the interest was localized and it has been only as a result of the recent activity that attention has been centered over such wide territory at one time.

Notwithstanding the Hazards, the Gulf Coast Is in for an Active Wildcat Development

By NEIL WILLIAMS

HOUSTON, Tex., Apr. 15.—The Gulf Coast district continues to hold the interest of the oil industry as the focal point of wildcat development activity and as the potential reserve for a large part of the country's petroleum requirements for the future. Despite the fact that a long succession of unsuccessful wildcat ventures have been chalked up there is no indication of a letup in the leasing play and there is anticipation of a renewed drilling spurt during the coming summer with the probability of proving up additional fields.

The definite proving up of oil production in the Schwabb-Sunshine district of southern Polk County by Shell Petroleum Corp.'s No. 1 Davis & Holmes has given impetus to the prospecting which has been going on along that "trend" extending eastward and westward from Conroe in expectation of there being additional fields of the Conroe type. There should be developments shortly in the Tomball area of northern Harris County which will have an important bearing on the possible existence of a field there, and which many operators have taken for granted as being there.

Although the activity along that trend has offered the greatest opportunity for general leasing, there has been no letup in demand for prospective salt dome acreage. In the past two months there has been a decided increase in blocking and geophysical work generally over the salt dome area with new interest also being displayed in possible but untouched reserves around the older domes. It is likely that in the next several months there will be a number of attempts to uncover new production on these old domes.

Salt Domes Attractive

Salt dome production always has held a strong attraction for the Gulf Coast wildcatter despite the fact it generally is the most hazardous and costly type of development. Longevity of salt dome fields, rich pay-off when a real pool is tapped and high recovery per acre, with an almost permanent and ready demand for the oil, offer a lure which makes a salt dome a valued reserve. Other fields come and go but salt dome fields seem to be inexhaustible with their apparently never-ending possibilities for further exploration.

Peculiarity of Wells

On the other hand, peculiar as it may seem, Gulf Coast wells on the average are shorter lived than wells in any other district in the country. Whatever longevity there is in coastal fields must be obtained not by the holding up of individual wells but by continual development and exploration, uncovering of new areas around each dome and by constant working over and deepening of old wells to lower sands.

Arnold and Kemnitzer in "Petroleum in the United States and Its Possessions" give the average life of Gulf Coast wells as four years, while it gives the average life of wells in the United States at 21 years. In the Mid-Continent fields these authors give the average life of oil wells at 14 years. By the Mid-Continent Field they specify Kansas, Oklahoma, Texas (excepting Gulf Coast and Southwest Texas), North Louisiana and Arkansas. These figures do not reflect modern production practices under proration by which the lives of wells are expected to be greatly prolonged by restricted flow and systematic and efficient operation. Similar tabulations including the present year and successive years should indicate a very sharp increase in the average life of wells.

However, on the Gulf Coast, because of peculiar conditions existing in salt dome fields, operators long before the coming of proration and state control of production practices, were compelled by experience and self-protection to adopt mechanical devices having for their purpose the regulation of the flow and the measure of the efficiency of the gas energy, and other methods of regulating production that would tend to give the operator of each well the maximum ultimate oil recovery from any particular sand. Consequently, regulatory practices now used on the Gulf Coast are little different from those followed for many years and so the life of Gulf Coast wells will be the least affected by modern proration restrictions. Locally, in such fields as Sugarland, where pressure maintenance has been followed from the start, wells no doubt will have longer lives and tend to bring up the average.

Pools of Big Production

The comparative short life indicated for Gulf Coast wells does not do justice, however, to the many, many wells holding records for long lives. In such fields as Humble, Spindletop and Sour Lake there are instances of wells producing for 20 to 25 years, each requiring only occasional cleaning out. It also does not take into consideration that while production of a well may be short lived in a certain sand, the hole may be deepened to lower sands and be completed again as a new well, and thus be made to produce at various periods over many years. It is by this constant deepening and redeepening and working over of old wells that Gulf Coast fields are able in many instances to build up high recovery of oil per acre and long life of fields. However, there are numerous instances in which single wells have produced as much as 1,000,000 bbls. of oil an acre from a single sand. The high acreage recoveries on salt domes, particularly in flanking sands, usually is attributed to the very steeply dipping sands. The same factor also is responsible to a large extent for the comparatively small productive area around domes which usually is confined

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Manufacturing Lubricating Oils at Casper Plant By Extraction With Dichloroethyl Ether

By J. M. PAGE, Jr., C. C BUCHLER and S. H. DIGGS
Standard Oil Co. (Indiana), Casper, Wyo.*

It is generally agreed that the modern motor oil should show as little change in viscosity with temperature as possible and should deposit little or no engine carbon in use. The necessity for these requirements has been discussed by a number of authors [1] [2] [3] [4] [5] [6] [7]. An important addition to these requirements is resistance to oxidation or sludging [2] [3] [5]. This latter has also been frequently discussed and it is the opinion of this laboratory that a motor oil should be highly reistant to oxidation and sludging. It has been the effort of refiners to produce a line of motor oils which excel in all these important characteristics but up to now the available oils have been largely a compromise. Thus oils produced from Pennsylvania crude by ordinary methods of refining show excellent viscosity-temperature relationships and resistance to sludging but are handicapped by carbon forming tendencies. On the other hand, oils of Gulf Coast origin have neither a satisfactory viscosity-temperature relationship nor do they exhibit good resistance to sludging, although they do have a very low carbon forming tendency. Blends of these two extreme types of oil possess the properties of each in approximate accordance with the quantities used, but only result in a rather unsatisfactory compromise. Oils refined from mixed base crudes (e.g., Mid-Continent or Salt Creek) by the usual methods of sulphuric acid treatment are, in general, similar to such blends, since the crudes contain oils of both types.

To meet the exacting requirements of the modern motor it has become necessary to develop new methods of lubricating oil manufacture. Hydrogenation of stocks deficient in this element has been definitely established upon a commercial basis[8]. Actual synthesis of superior lubricants is a relatively recent development of this company[10]. Following an exhaustive study of selective solvents[7] Ferris and Houghton describe the nitrobenzene extraction process[7], which is similar in its action to the Edeleanu Process[11] whereby the undesirable constituents of lubricating fractions are selectively extracted from the naturally occurring oils of high quality.

This paper deals specifically with the production of lubricating oils by extraction of petroleum fractions with $\beta\beta'$-dichloroethyl ether†, a nonpoisonous, stable, and highly selective solvent now available in commercial quantities‡.

Properties of $\beta\beta'$-Dichloroethyl Ether

For many years a selective solvent had been sought which would prove suitable for large scale use in separating the high and low grade constituents known to exist in all lubricating oils. Many selective solvents were found to be satisfactory from a research point of view, but wholly unsuited for plant scale usage, due either to their excessive cost, availability or to some unfavorable feature in their physical, chemical or physiological properties. A detailed investigation of $\beta\beta'$-dichloroethyl ether by this laboratory showed it to be a very selective solvent and its merit has been confirmed through plant scale usage.

$\beta\beta'$-Dichloroethyl ether (hereinafter termed "Chlorex") is a colorless liquid of ethereal and not unpleasant odor, having the properties shown in Table 1, most of which are quoted from Fife and Reid[9]. Aside from the very desirable property of high selectivity, it is apparent that this solvent is particularly well adapted to plant scale usage. Its high specific gravity permits rapid and efficient separation of the two phases

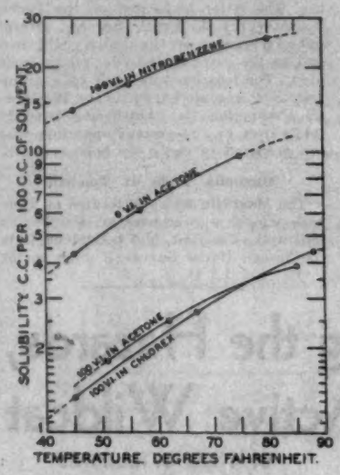
SOLUBILITY C.C. PER 100 C.C. OF SOLVENT
TEMPERATURE. DEGREES FAHRENHEIT.
100 V.I. IN NITROBENZENE
0 V.I. IN ACETONE
100 V.I. IN ACETONE
100 V.I. IN CHLOREX

Figure 1—Solubility of oils of 100 viscosity index and 0 viscosity index in chlorex, nitrobenzene, and acetone

formed with oils. Its boiling point is well below the vaporization temperature of all grades of motor oil, while its low vapor pressure precludes the possibility of significant losses in storage. The freezing point of the material is so low that precautions in this respect are unnecessary. Since extraction with Chlorex is ordinarily carried out within the temperature range of 30° to 80° F., it is apparent that its low viscosity at these temperatures is also a factor of importance. The flashpoint of the solvent is well above that normally considered hazardous for petroleum distillates. It is noninflammable at ordinary temperatures. Although experiments conducted by the Bureau of Mines indicate that for equal concentrations in air, Chlorex is somewhat more toxic than carbon tetrachloride[4], this toxic concentration is appreciably higher than that which would be built up over liquid Chlorex at ordinary temperatures or under normal storage conditions. During the course of nearly one year's use of this material on plant scale, no cases of injury or sickness have resulted through its use.

Measurement of Viscosity-Temperature Relationship and Resistance to Oxidation

The viscosity index (V.I.) system of Dean and Davis[4] as modified by Davis, Lapeyrouse and Dean[5] will be used in this paper for purposes of correlating the viscosity-temperature characteristics of "raffinates," finished oils, and "extracts." In this system, oils of 95 to 105 V.I. may be classified roughly as Pennsylvania type, while those of 0 to 20 V.I. represent the usual products of Gulf Coast crude. Some use will also be made of the viscosity-gravity constant (V.G.C.) of Hill and Coats[11] values of which vary from 0.810 for Pennsylvania to 0.900 for coastal types.

TABLE 1—PROPERTIES OF $\beta\beta'$-DICHLOROETHYL ETHER

Structural formula: Cl . CH_2 . CH_2 — O — CH_2 . CH_2 — Cl	
Boiling point (sea level)	352.4° F. (178° C.)
Freezing point	61° F. (—51.7 °C.)
Specific gravity at 20°/20° C.	1.222
Viscosity, centipoises at 25.5°C.	2.0653
Viscosity, Saybolt Universal at 77° F. (25° C.)	32 sec.
Viscosity, Saybolt Universal at 32° F. (0° C.)	39 sec.
Vapor pressure at 100° F. 10 mm.	
Latent heat of vaporization 115.4 B.t.u./lb.	(64.1 cal./gm.)
Specific heat (at 85° F.)	0.369
Flash (closed cup)	168° F. (75.5° C.)
Solubility in water at 30° C.	1.91%
Solubility in water at 90° C.	1.71%

Resistance to oxidation is expressed in terms of "sludging time," which is the number of hours required for an oil to form a given quantity of asphaltenes when oxidized at a specified elevated temperature. The test has been correlated with tests of oils in an engine and is a direct measure of the useful life of a lubricant under severe crankcase conditions.

Methods of Extraction

Extractions may be carried out by (a) single batch application of the solvent, by (b) multiple batch application, wherein fresh portions of the solvent are used in repeatedly extracting the raffinate, by (c) batch countercurrent, wherein the solvent and oil pass countercurrent through a number of separate extraction tanks, and (d) by countercurrent flow in a single vessel. These methods are given in the order of their increasing efficiency and will be discussed later.

The "Ideal" Selective Solvent

The ideal solvent would separate completely the desired from the undesired oils. In the present case the oil desired is of high viscosity index and is less soluble in all selective solvents than the undesirable oil of low V.I. The ideal solvent, then, would dissolve no oil of high V.I. but would be miscible in all proportions with low V.I. oil at normal extraction temperatures.

$\beta\beta'$-Dichloroethyl Ether as a Selective Solvent

Solvents heretofore proposed for extraction may be classified into two types, neither of which is ideal. The types are (a) those solvents which, although miscible in all proportions with low V.I. oil, nevertheless dissolve excessive quantities of high V.I. oil, and (b) those solvents in which the high V.I. oil is nearly insoluble, but in which the low V.I. oil, though more soluble, is by no means miscible in all proportions.

In Figure 1 the solvent action of Chlorex ($\beta\beta'$-discloroethyl ether) is compared with that of nitrobenzene, an example of the first type, and with that of acetone, an example of the second type. Chlorex soluble oil, of very low V.I., is miscible in all proportions with both Chlorex and nitrobenzene above 32° F., but is soluble in acetone only to the extent shown. The very low solubility of high V.I. oil in Chlorex is evidence of its close approach to the "ideal" selective solvent.

Table 2 substantiates the data of Figure 1. The low solubility of 100 V.I. oil in Chlorex is again evident from its high yield of oil of this quality. Acetone exhibits a poor selectivity, as measured by V.G.C. or V.I. difference (between raffinate and extract), which may be explained by its insufficient solvent capacity for low V.I. oil.

Chlorex Extraction of Oils from Various Sources

Table 3 illustrates the adaptability of multiple Chlorex extraction to stocks of widely different viscosity and viscosity indices. Oils 1 and 4 are Mid-Continent type, while oils 2 and 3 are of California and Pennsylvania origin, respectively. It is to be noted that raffinates of satisfactory V.I. are obtainable from each, while the appreciable content of very low V.I. oil extracted from the Pennsylvania sample is particularly interesting. The quantities of solvent used would be materially lowered by countercurrent application, the quantities necessary being roughly proportional to the difference between multiple and countercurrent application shown in Figure 2.

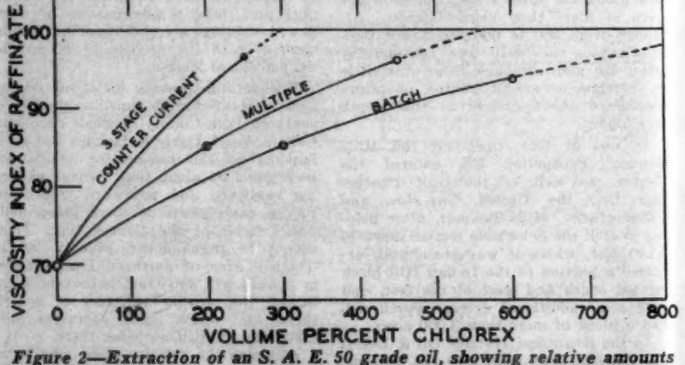

Figure 2—Extraction of an S. A. E. 50 grade oil, showing relative amounts of chlorex required by several methods of extraction to produce an oil of given viscosity index

That extraction is not always accompanied by a decrease in viscosity of the raffinate is shown by the appreciable increase to be noted in the case of oil 2. As a general rule, cylinder stocks show a loss in viscosity upon extraction, regardless of their original viscosity index.

Improvement of Oxidation Resistance and Conradson Carbon by Chlorex Extraction

The effect of Chlorex extraction upon the oxidation and Conradson carbon values of stocks of widely different character is shown in Table 4.

Cylinder stocks have invariably shown

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†United States and foreign patents pending.

‡$\beta\beta'$-Dichloroethyl ether sold by Carbide & Carbon Chemicals Corp. under the trademark "Chlorex."

a greater resistance to oxidation (or "sludging" in actual use, as confirmed by engine tests) than distillate oils of similar origin. It will be noted that the Chlorex raffinates, regardless of the viscosity or V.I. of the original oil, show a useful life considerably in excess of the unextracted oils. It is especially significant that the high V.I. of Sample 8, a Pennsylvania grade oil, is in no way an indication of resistance to sludging, although the raffinate from this oil is satisfactory. Sample 9, of California origin, likewise yields a superior grade of lubricant after extraction with Chlorex. That the method of extraction affects oxidation resistance is shown by a comparison of Samples 5 and 6. There is evidence of some parallelism between improvement in V.I. and improvement in resistance to oxidation, effected upon a given oil, by Chlorex extraction.

Table 4 also includes carbon residue data, the values of which are very substantially lowered in all cases, following treatment of the oils with Chlorex.

Comparison of Different Methods of Extraction

Most of the experimental extractions reported in this paper were performed by either single or multiple applications of solvent, the method employed being stated in each case.

Figure 3 gives a comparison of the efficiency of three methods of extraction from the standpoint of yields obtained for a given quality, or viscosity index, of raffinate as applied to an S.A.E. 20 oil. If it is assumed for this particular case that the oils contain only a 100 V.I. component, soluble in Chlorex or nitrobenzene to the extent indicated on Figure 1, and a low V.I. component, completely soluble in either Chlorex or nitrobenzene, a value may be obtained representing the maximum 100 V.I. content of the stock by addition of the yields obtained to the indicated quantity dissolved at the temperature of extraction. For Chlorex, this sum is 81.8 per cent; for nitrobenzene, 82.9 per cent; which difference is probably within experimental error. Since the curve for countercurrent extraction (in Figure 3) is based upon the use of 250 volumes of Chlorex to 100 volumes of oil at 60° F., a yield of approximately 77 per cent of 100 V.I. raffinate would be expected, which is in close agreement with the yield actually obtained.

The data of Figure 2 were obtained on an oil of S.A.E. 50 grade, and show the relative quantities of Chlorex necessary to obtain a given V.I. by three methods of extraction. The economy of the three-stage countercurrent system is evident.

The lower yields of 100 V.I. material obtained by the less efficient methods of batch or multiple extraction are due to the higher solvent requirements of these methods, with a consequent loss of greater quantities of dissolved raffinate.

Figure 4 illustrates the effect of temperature and solvent ratio upon the yield and viscosity index of the raffinate. The data for this plot were obtained by extracting batchwise a dewaxed Mid-Continent S.A.E. 50 distillate of 102 viscosity with three ratios of solvent at four temperatures. The solid lines represent the results at constant solvent ratio while the dashed lines represent results at constant temperature. It will be noted that the viscosity index of the raffinate increases with increasing temperature of extraction with constant solvent volume while the yield of a given V.I. raffinate increases with decreasing temperature and increasing solvent ratio. Thus the yield and viscosity index of the raffinate may be varied over a wide range by varying the temperature and solvent ratio. This affords extreme flexibility in the manufacture of lubricating oils.

The Chlorex solvent process for production of high V.I. oils may be combined with acid treating. In general the result of the combination is to produce a yield of a given V.I. oil substantially identical with that for the solvent without acid, but with a small saving in solvent required. Further, the color of the finished product is somewhat improved in the combined process. Typical comparative results are shown in Table 5.

Plant Operation

A commercial Chlorex extraction plant, now based upon a three-stage countercurrent system of extraction, has been operating successfully for nearly a year at the Casper, Wyo., plant of the Standard Oil Co. (Indiana). From the flow sheet of this plant in Figure 5 it will be seen that the entering stock, heated above its pourpoint, is mixed with twice-used solvent before cooling to the desired extraction temperature. Raffinate from this first extraction is treated with once-used solvent from the final chamber, and raffinate from the second extraction is treated with fresh solvent. This plant utilized largely existing refinery equipment, and has a capacity of 500 bbls. of finished oil per day. Another commercial plant of about 800 bbls. daily capacity using a continuous countercurrent extractor is now going into operation.

Thorough contact of the stock with the solvent is essential to maximum efficiency, especially if the stock is waxy at extraction temperatures. Accordingly, mechanical agitation is employed for obtaining the desired contact. It should be pointed out that the very low viscosity of Chlorex is advantageous for getting good contact since a few per cent of Chlorex dissolved in oil produces a mixture which is very fluid, even with the most viscous oils.

Lubricating stocks varying in viscosity from the lightest motor grades to the heaviest cylinder stocks are handled without change in the general plan. The plant has operated continuously for over eight months upon a wax-bearing stock, the pourpoint of which is 120° F. (before extraction) and upon a partially dewaxed stock the pourpoint of which is 30° F. The presence of wax has in no way been a hindrance to extraction.

Petroleum wax is very slightly soluble in Chlorex at ordinary extracting temperatures and therefore may be looked upon as an inert diluent of the stock. Equal quantities of Chlorex, based upon the wax-free oil, produce raffinates of equal quality, whether applied to the wax-bearing or wax-free stock.

Batch distillation with steam at atmospheric pressure in 300-bbl. stills fired to 350° F., with a maximum stripping

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TABLE 2—SINGLE BATCH EXTRACTION WITH CHLOREX*, NITROBENZENE† AND ACETONE‡

(200 volumes solvent used to 100 volumes oil, in all cases)

	Original oil	Chlorex raffinate	Chlorex extract	Nitro-benzene raffinate	Nitro-benzene extract	Acetone raffinate	Acetone extract
Vis. at 210° F.	49	49	55	46	53	46	52
Vis. at 100° F.	272	232	582	216	406	236	390
Vis. index	77.5	104.0	5.4	104.5	54.1	89.4	49.8
V.G.C.	0.845	0.828	0.898	0.819	0.871	0.833	0.891
Gravity, A.P.I.	25.8	28.5	18.0	29.8	21.8	27.7	19.8
A.S.T.M. pourpoint, °F.	0	5	—10	5	—10	0	—15
Yield, vol., %	100.0	74.8	25.2	51.1	48.9	79.2	20.8
"Selectivity"§		93.6		50.4		39.6	

*Miscible at 120° F.; extraction at 77° F. †Miscible at 98° F.; extraction at 50° F. ‡Miscible at 120° F.; extraction at 30° F. §"Selectivity" is expressed as V.I. of raffinate minus V.I. of extract.

Note—SO_2 is an example of an extremely selective solvent of very low solvent power. Forty-three equal applications of SO_2 (on an untreated Salt Creek stock) for a total of 46 volumes of solvent to 1 volume of oil, produced a raffinate of 61 V.I. and an extract of —300 V.I. Hence the quality of the raffinate, even after this excessive extraction, is still unsatisfactory, although the V.I. difference, or "selectivity" is 261.

TABLE 3—CHLOREX EXTRACTION OF OILS FROM VARIOUS SOURCES

Oil No.	Vis. at 210° F. of charge	V.I. and V.G.C. of charge		% vol. Chlorex	% vol. yield of Raffinate	Vis. at 210°F. Raffinate	Vis. at 210°F. Extract	V.I. and V.G.C. Of raffinate		V.I. and V.G.C. Of extract	
1	49.0	77.5	0.845	200	74.8	49.0	59.0	104.0	0.828	14.2	0.896
2	59.0	54.3	0.868	600	30.6	66.0	59.0	95.0	0.811	13.8	0.894
3	50.5	103.0	0.832	200	87.5	50.0	60.0	117.0	0.808	8.4	0.902
4	182.0	85.0	0.827	600	73.5	142.0	625	99.5	0.807	(*)	0.903

*Too viscous at 100° F.

TABLE 4—EFFECT OF CHLOREX EXTRACTION UPON OXIDATION AND CONRADSON CARBON VALUE

Sample No.	Before extraction: Vis. at 210° F.	V.I.	Sludging time hours	Conradson carbon residue	After extraction: V.I.	Sludging time hours	Conradson carbon residue	Total % Chlorex	No. of extractions
				Oxidation by Method 1*					
1	46	64.0	29	0.034	108.0	74	0.002	250	3
2	50	75.0	21	0.056	96.0	71	0.02	250	3
3	90	75.0	22	0.784	90.0	116	0.21	250	3
4	183	83.0	64	2.693	92.0	240	1.19	250	3
				Oxidation by Method 2*					
5	90	75.0	37	0.784	85.0	107	0.21	250	1
6	90	75.0	37	0.784	90.0	127	0.21	250	3
				Oxidation by Method 2*					
7	50.5	75.0	19.5	0.051	102.0	110	0.03	200	3
8	50.5	103.0	30	0.175	117.0	180	0.13	200	2
9	59.0	54.3	10	0.638	95.0	83	0.27	600	3

*The two methods differ slightly in temperature, Method 2 is a development from Method 1 and has been shown to approximate engine results somewhat better than Method 1.

TABLE 5—EXTRACTION OF M.C. DISTILLATES—WITH AND WITHOUT ACID TREATING

Viscosity of distillate	Acid treatment	Vol. per cent Chlorex used and extraction temperature	Finished oil yield	Viscosity index of finished oil
115 at 210° F.	None	200% at 100° F.	65%	88
115 at 210° F.	1 lb. 93% acid per gal.	170% at 100° F.	64%	88
51 at 210° F.	None	200% at 50° F.	74%	98
51 at 210° F.	1 lb. 93% acid per gal.	160% at 50° F.	70%	93

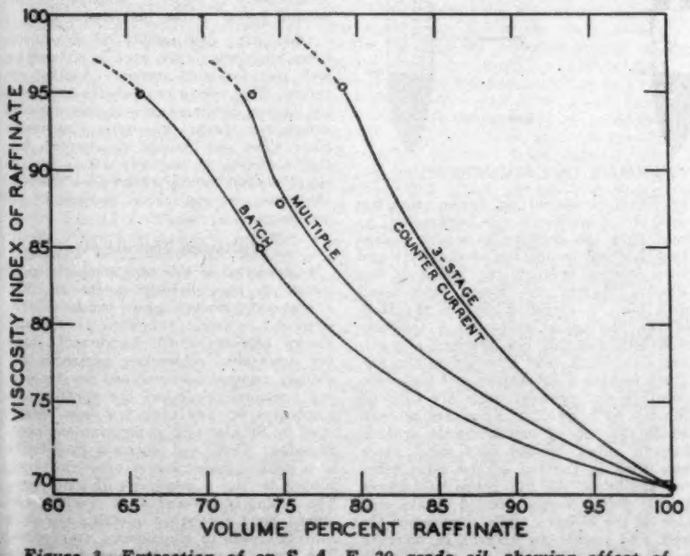


Figure 3—Extraction of an S. A. E. 20 grade oil, showing effect of method of extraction on yield of an oil of given viscosity index

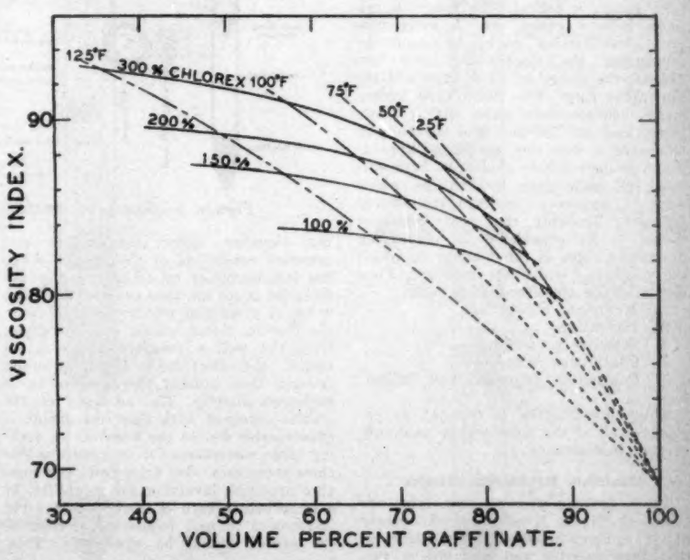


Figure 4—Batch extraction of an S. A. E. 50 distillate, showing effect of quantity of solvent and temperature of extraction on yield of oil of a given viscosity index

Rapid Advance Made in Perfecting Instruments for Exact Recording of Subsurface Pressure

By D. G. HAWTHORN
Production Engineer, Barnsdall Oil Co.*

Rapid progress has been made during the past few years in the development of instruments for obtaining precise measurements of subsurface pressure and in the general technique of test performance. Today there are some 8 to 10 different instruments in use which have been developed to the practical stage and it is the purpose of this paper to classify, describe and contrast these instruments and to present a brief synopsis of the testing procedure. Attention is confined to this mechanical phase of the subject of subsurface pressures.

In developing instruments for measuring subsurface well pressures many problems were encountered. One of the greatest difficulties arose from the restrictions necessarily placed on the cross sectional dimensions of the instruments in order to permit their use in wells equipped with tubing and to compact into this small space mechanism sufficiently sensitive and yet rugged enough to withstand field service. Further, to construct pressure measuring devices capable of maintaining reasonable degrees of precision while operating through the range of temperature encountered in wells, presented even more difficult problems. Fortunately, however, most of the obstacles have been overcome and, although there is still room for improvement, the instruments in present use are both reliable and substantial and possess exceptional degrees of precision.

Classification

For the most part, subsurface pressure instruments are little more than pressure gauges enclosed in steel cases. The mechanisms, however, differ widely and it is for this reason that the following discussions are offered.

Classification of subsurface pressure instruments may be made in several different manners. They may be classified as either direct or indirect reading instruments, depending on whether or not interpretation is necessary to reduce the indicated reading to the final results. Further classification mhy be based on the characteristic features of the pressure element design, such as, a Bourdon tube gauge, a helical tube gauge, a sylphon bellows gauge, etc. A more general classification might be made by separating the instruments into two classes, the gauge or bomb type and the apparatus type. The gauge type instruments are complete units within themselves and are lowered into the hole by means of a wire line, while the apparatus type instruments consist of both surface and subsurface mechanisms which work in unison to indicate the desired pressure. Probably the most pertinent factor to be considered in classifying pressure gauges is the manner in which the pressure results are recorded. Thus the following classification is made:

1. Maximum registering.
2. Indicating.
3. Selective recording.
4. Continuous recording.
5. Continuous recording and indicating.

This classification is thought to encompass all of the more widely used subsurface instruments.

Maximum Registering Gauges

Three instruments of this type are shown in Figure 1, all of which operate like a common medical thermometer, in that they register and maintain a record of the maximum conditions through which the instrument has passed until manually reset to the zero position.

Probably the simplest of all instruments used to measure subsurface pressures is shown in Figure 1-A[1]. It is merely an inverted closed tube or shell provided with a check valve at the bottom and a means for attaching a common indicating pressure gauge. Upon lowering the instrument to any specific point in a well, a sample of fluid (regardless of its nature) is admitted into the chamber under temperature and pressure conditions of this point. When the instrument is raised, a pressure differential is set up, thus causing the check valve to close and retain the fluid sample therein. After taking the instrument from the well a pressure gauge is attached and the check valve manually tripped, thus causing the pressure to be indicated directly. The accuracy of the results obtained with this instrument is questionable due to the necessity of making large corrections for temperature. Serious error may also arise from the complex problems involving gas solubility. If a temperature bath is used to reheat the instrument to well temperature, most of the errors should be eliminated. This, however, is impractical for field service and more than offsets the advantage of the simplicity of the instrument and its low initial cost.

Another instrument of the maximum registering type is shown in Figure 1-B, designed and developed by Pat McDonald, Indian Territory Illuminating Oil Co., Bartlesville, Okla. The pressure element consists of a specially designed square metal box welded to the lower side of the main body of the instrument, inside of which is placed an Invar steel bar used to compensate for expansion. As seen from the drawing, a capillary glass tube is fixed to the top of the body and is connected through the inside of the element chamber by means of a small drill hole. A recess drilled in the body of the instrument serves as a temperature bulb and, like the pressure element, has a capillary tube attached to the top. Upon making a subsurface test both temperature and pressure units are filled to the top with mercury. Caps are screwed on to the top of metal guards protecting the tubes, leaving only small openings filled in the top of the glass tubes for spillovers. As the gauge is lowered into a well, pressure exerted on the outside of the element walls compresses the unit and causes an amount of mercury to be squeezed from the top of the capillary tube proportional to the pressure encountered. Upon removing the instrument from the well, the mercury column drops and the amount of this drop is measured with a rule and the pressure computed by means of a previously determined calibration factor. Maximum temperature is registered in the same manner. When approaching or receding from the vicinity of the test point care must be taken to avoid undue jarring of the instrument, as excessive spilling over of the mercury at this point will cause the final reading to be high. Development is now in progress for constructing an instrument of similar design incorporating means for the continuous recording of temperature and pressure.

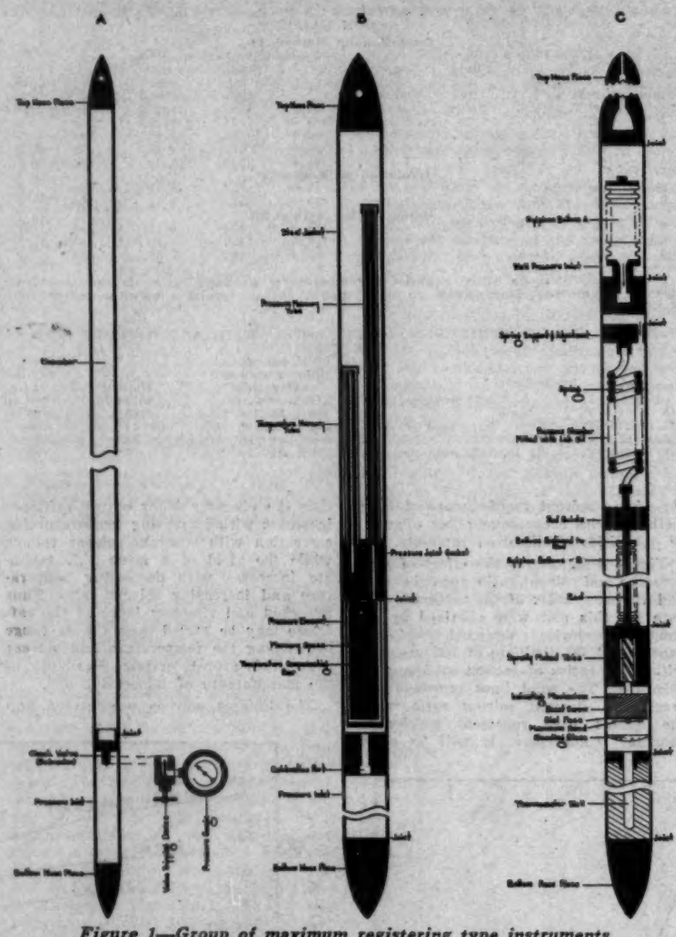


Figure 1—Group of maximum registering type instruments

Figure 1-C illustrates a maximum registering gauge of more intricate design, which was designed by R. J. S. Piggot, Gulf Research Laboratory, Pittsburgh, Pa. Well pressure is admitted through the ports and acts on the sylphon bellows "A" installed as a seal or pressure transmitting diaphragm for the purpose of separating the well fluids from the lubricating oil retained within the instrument. The lower end of bellows "B" is fastened to the main body of the instrument, while the upper end is attached to a rod, which in turn is fastened to the free end of a coil spring. Pressure on bellows "A" is transmitted through the oil to bellows "B" and, compressing it downward, moves the rod against the resistance of the coil spring. To the lower end of the rod is fixed a pin, which, moving in a helically fluted tube, rotates the maximum pressure dial. The dial is held in position by a spring and when pressure is released from the instrument all mechanism with the exception of the maximum dial returns to its original position. Upon taking the instrument from the well the bottom nose piece and thermometer well are removed, thus exposing a magnifying eye-glass through which the pressure dial may be seen. After taking a reading the maximum dial is reset to zero position by means provided for this purpose. When the pose piece is replaced the instrument is again ready for operation. When subjected to increased temperature, expansion of the various working parts makes it necessary to apply a temperature correction factor to the indicated results.

Obviously, instruments of the maximum registering type require a separate well test for each pressure reading obtained. This condition constitutes one of the major disadvantages of this type of subsurface gauge as quite frequently more than one reading is desired, but this objection is partially offset by the simplicity of the instrument, in that no clockwork or recording mechanism is necessary.

Indicating Instruments

Instruments of this type comprise those which are read directly on the dial like a common pressure gauge while the instrument is being subjected to the unknown pressure. Such instruments used for measuring subsurface pressures obviously require some method for indicating pressure results at the surface. An apparatus of this type has been developed by Stanley Gill, consulting engineer, Houston, Tex., and consists essentially of a continuous string of one-eighth-inch tubing having a one-sixteenth-inch bore. The tubing is lowered by a specially designed hoist through a stuffing box and into the well to the desired test point. The well pressure is balanced by admitting a sufficient amount of high pres-

*Before meeting Southwestern District, A.P.I. Division of Production, Houston, Tex.

[1]Note: Illustrations supplementing descriptive matter are not drawn to scale but are merely schematic sketches showing basic principles of operation and design.

sure gas, usually hydrogen, to completely fill the tubing. The pressure required to produce this condition is read directly from a common pressure gauge at the surface. To obtain the final result, the indicated pressure is corrected by adding the weight of the gas column.

This method of determining subsurface pressure affords the possibility of taking any desired number of readings over any period of time without removing the apparatus from the well, and has the further advantage of possessing a wide field of application. On the gas lift wells the flow string may be used to balance the well pressure and likewise on wells which flow naturally through tubing, a small auxiliary compressor may be attached to supply the high pressure gas necessary to produce a balanced condition. Another alternative is a string one one-quarter-inch tubing which may be installed simultaneously with the well tubing, thus providing a permanent means by which the subsurface pressure may be measured.

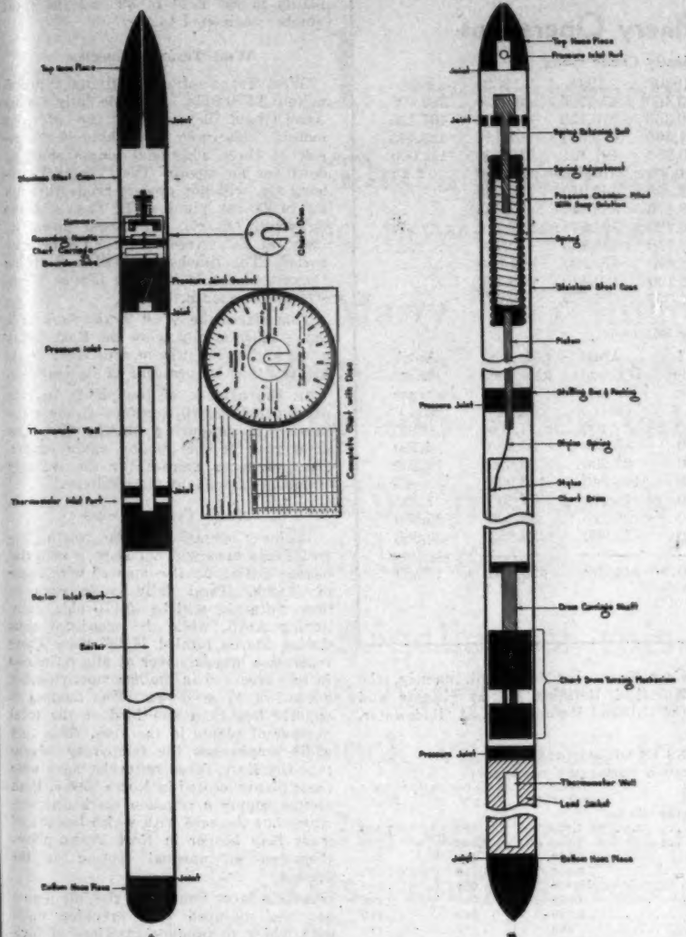


Figure 2—Showing instruments of selective recording type

Selective Recording Instruments

Two instruments of this type are shown in Figure 2. These instruments record on a chart a series of intermittent readings taken either at predetermined intervals of time or whenever the operator chooses, thus differing from those instruments which record continuously.

Figure 2-A shows an instrument of this type designed by Harry F. Wright and Dunn and Lewis, Tulsa, which uses a Bourdon tube as a pressure element. The well pressure is admitted through the inlet ports and passes through the body of the instrument to the Bourdon tube. When subjected to pressure the tube tends to straighten out and in so doing, rotates a centrally pivoted shaft to which a recording needle is attached. A light weight or hammer is suspended over the needle on a spring, while a chart carriage is fixed below the needle. A chart disc is placed in the carriage preparatory to making a test and when running the instrument in a well a sudden stop or jerk of the wire line supporting the instrument will cause the hammer to strike the needle hand and thereby make an impression on the chart disc. By repeating this operation, numerous pressure readings may be obtained without removing the instrument from the well. After the instrument is removed from the well, the chart disc is taken out, replaced on the chart proper and interpreted. A thermometer well section, in which may be placed a maximum indicating thermometer for determining bottom hole temperature, is attached below the main body. Below the thermometer section is fastened a bailer section to permit securing a sample of the bottom hole fluid. An additional feature is now provided for this instrument which electrically drives the hammer at predetermined intervals of time onto the needle point, thus eliminating the necessity of manual operation.

Figure 2-B shows another instrument of the selective recording type. This instrument, designed by Standard Oil Co. of California and Humble Oil & Refining Co., Houston, Tex., has been rather widely used and is deserving of special attention. Its operation consists essentially of pressure acting upon a piston against the resistance of a coil spring. Well pressure is admitted through the inlet ports and allowed to act upon the fluid, usually soap solution, contained within the piston chamber. This pressure is transmitted through the fluid to the piston and drives it downward against the resistance of the spring. The piston moves through a specially designed stuffing box and packing which functions as a cylinder. The end of the piston projects past the stuffing box and into the chart drum chamber, and to this end is fastened the stylus spring and stylus, which in turn projects into the chart drum. The pressure record is obtained by the downward movement of the piston and stylus. After a record has been obtained, a jerk of the wire line supporting the instrument trips drum turning mechanism, which rotates the drum slightly and places the stylus in a new position on the chart. By repeating this operation, any reasonable number of pressure readings may be obtained. After taking the instrument from the well, the chart is removed and interpreted. Due to expansion of the working parts it is necessary to apply a temperature correction factor to the indicated pressures. The instrument is also provided with a temperature well for obtaining bottom hole temperature. While most subsurface pressure instruments have a diameter ranging in the neighborhood of 1¾ inches, this instrument has a diameter of only 1⅛ inches. This feature affords the possibility of making certain flow tests in 2-inch tubing, an undertaking rather hazardous with instruments of the larger diameter.

Certainly subsurface gauges of the selective recording type possess a very definite advantage over those of the maximum indicating type, in that a number of pressure readings may be obtained without removing the instrument from the well. Certain advantages due to simplicity of construction may also be claimed in their favor. However, these gauges are thought to be almost as complicated as instruments of the continuous recording type and in addition they have the decided disadvantage of requiring manual control in obtaining the pressure record. This type of instrument also possesses several other disadvantages when compared to those instruments which give a continuous record.

An instrument, developed by Geophysical Research Corp., Tulsa, commonly known as the Amerada gauge, which through its wide usage is also deserving of special mention, is shown in Figure 3-A. The complete instrument is about 40 inches long, 1¾ inches in diameter and weighs approximately 25 pounds. The complete gauge mechanism consists essentially of three main parts, that is, the clock work, the chart carriage mechanism and the pressure element. The pressure element consists of a helical tube to which is attached a centrally pivoted rod. A stylus arm and stylus are fastened to this rod. The tube is fabricated into a coil which has a sufficient number of convolutions to furnish movement of the stylus throughout its entire range without the use of multiplying mechanism. A clock is provided to continually rotate the spirally grooved lead screw on which the chart carriage is supported. A reproduction of an actual test chart is shown in the drawing and illustrates how the time axis is longitudinal with the axis of the instrument, while the pressure axis runs circumferentially with the circular wall of the chart carriage. This is completely the opposite from the manner in which the instrument shown in Figure 3-B operates. In as much as instruments of this type record pressure continuously, the number of readings that may be obtained is limited only by the time required to move the instrument from one position in the well to another and by the time period of the clock. Upon completing a test, the chart is removed from the instrument and interpreted. A step chart similar to that shown may be obtained by stepping the instrument at different depths when running a test, thus supplying the information from which to draw flow col-

(Continued on Page 40)

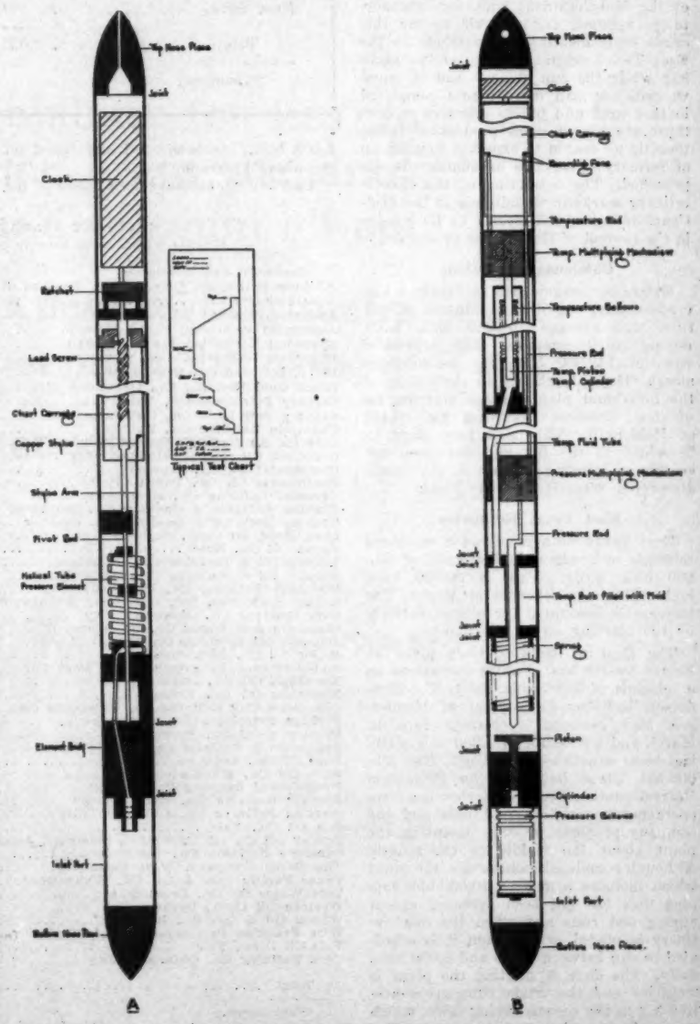


Figure 3—Continuous recording type instruments

Plants in East Texas Account for the Increased Refinery Crude Schedules During April

By W. T. ZIEGENHAIN

The expansion of refinery operations in the East Texas area accounts for practically all of the 17,555-bbl. increase in the scheduled daily refinery crude runs in the Mid-Continent for April when compared with March.

Anticipating an improvement in the consumption of gasoline during the early summer months, refiners usually increase their crude schedules at this period of the year and the increase in April will be about the same as shown a year ago. The total crude runs for April remain substantially below those of this period of the year in many years back except for the unusually low schedules maintained throughout 1932.

The larger crude runs for April are based upon the hope of better business in part but "cheap" crude has undoubtedly been the immediate incentive to increase schedules in some sections. In East Texas crude is reported selling for prices ranging from 15 cents a barrel all of the way up to the posted price of 50 cents a barrel. Those refiners in and near the field who are buying this crude temporarily at least, hold a distinct advantage over refiners in other sections of the Mid-Continent who, for transportation reasons, are not able to run this crude economically. The attitude in the East Texas refining groups is "to make hay while the sun shines" and in April we will see still more plants completed in that area and unless effective restrictions are placed upon production there, there is no reason to expect a slowing up of refinery operations as summer is approached. The correcting of the chaotic refinery marketing conditions in the Mid-Continent area still seems to lie wholly in the control of East Texas producers.

Mid-Continent Refinery Operations

Scheduled Average Daily Crude Runs

	1929	1930	1931	1932	1933
January	508,550	535,460	478,795	405,910	399,405
February	506,800	519,355	470,125	411,280	407,125
March	514,950	531,500	449,634	401,155	423,445
April	530,530	555,250	497,391	419,750	441,000
May	577,500	574,300	510,540	436,160	.....
June	583,030	572,250	567,915	440,765	.....
July	565,800	548,475	588,840	433,255	.....
August	555,250	526,400	590,545	427,710	.....
September	552,300	498,710	588,105	430,430	.....
October	544,720	518,800	472,190	401,995	.....
November	545,473	506,700	480,440	408,180	.....
December	540,630	478,360	456,525	416,275	.....

Operations by Districts

	April 1 Dy.crude capacity (bbls.)	April Dy.crude runs (bbls.)	March Dy.crude runs (bbls.)	April daily increase (bbls.)
Arkansas	48,000	17,400	17,500	*100
Kansas	174,000	89,450	85,350	4,100
North Louisiana	41,000	23,950	26,650	*2,700
Oklahoma	312,900	148,945	148,900	45
North Central Texas	228,650	79,170	77,405	1,765
West Texas	144,100	28,225	33,785	*5,560
East Texas	87,150	53,960	33,855	20,005
Total	1,035,800	441,000	423,445	17,555

*Decrease.

Oklahoma Operations

Oklahoma refiners will run slightly less crude during April than March. Crude runs will average 148,945 bbls. daily during April compared with scheduled runs of 148,900 bbls. in the previous month. The only change in the status of the individual plants is the starting up of the Crescent Refining Co. plant at Holdenville. This is a new plant to be added to the list and has been operating on crude produced in the newly discovered West Holdenville Field.

East Texas Refineries

East Texas refiners report a combined schedule of crude runs for April of 53,860 bbls. daily. This is 20,000 bbls. higher than the schedule in March. The increase is accounted for almost entirely by the starting up of idle plants.

The Central Refining Co.'s plant at Friars Switch has resumed operations on a schedule of 3,000 bbls. daily. The Henderson Refining Co.'s plant at Henderson also resumed operations late in March and a schedule of 5,000 bbls. daily has been established for April. The 10,000-bbl. plant built by the Petroleum Refractionating Co. at Longview has been operating under test conditions and the company proposes to start operating the plant about the middle of the month. Although completed months ago, the plant which includes a modern 10,000-bbl. topping unit has not been operated except during test runs and when the new refinery is placed in operation it is scheduled to run between 6,000 and 8,000 bbls. daily. The date of starting the plant is tentative and the crude runs are tentative but in the accompanying table, which shows the runs by plants, an average of 5,000 bbls. has been used and based on the above program.

Two new plants have been added to the East Texas list for April, namely, the Hartfield Refining Co. at Kilgore and the Gilliand Refining Co. at Gladewater. These bring the number of operating plants in the field to 32 and the total number completed to 35.

REFINERY OPERATIONS IN OKLAHOMA

(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Aver daily runs— Apr.	Mar.
Altitude Petroleum Corp. (J. H. Peacock Refining Co.), Oklahoma City	3,000	500	1,000
Anderson-Prichard Oil Corp., Cyril	6,000	4,000	4,000
Associated Petroleum Corp., Allen	5,000	(*)	(*)
Barnsdall Refineries, Inc., Barnsdall	6,000	3,500	3,500
Barnsdall Refineries, Inc., Okmulgee	10,000	5,000	5,000
Bell Oil & Gas Co., Grandfield	4,500	3,000	2,200
Black Gold Refining Co., Oklahoma City	1,500	540	800
Century Petroleum Co., Tulsa	500	(*)	(*)
Century Petroleum Co., Oklahoma City	2,500	565	1,500
Champlin Refining Co., Enid	16,000	7,000	7,000
Cole (L. S.) Refining Co., Oklahoma City	400	200	200
Columbia Oil Corp., Oklahoma City	3,500	2,000	2,500
Continental Oil Co., Sapulpa	10,000	(*)	(*)
Continental Oil Co., Ponca City	30,000	14,000	16,000
Crescent Refining Co., Holdenville	1,000	1,000	(*)
Cushing Refining & Gasoline Co., Blackwell	1,800	1,500	1,500
Cushing Refining & Gasoline Co., Cushing	3,500	2,500	2,500
Deep Rock Oil Corp., Cushing	10,000	9,000	9,000
Eason Oil Co., Enid	5,000	3,000	3,000
Empire Oil & Refining Co., Okmulgee	4,000	2,800	2,500
Empire Oil & Refining Co., Ponca City	12,000	7,300	7,000
Firestone Refining Co., Oklahoma City	200	500	600
Garber Refineries, Inc., and Omar Refining Co., Garber	3,500	(*)	(*)
Gem Refining Co., Oklahoma City	1,000	(*)	(*)
Globe Oil & Refining Co., Blackwell	7,500	6,000	5,000
Johnson Oil Refining Co., Cleveland	6,000	3,500	3,500
Major Oil Co., Oklahoma City	2,000	500	600
Mid-Continent Petroleum Corp., West Tulsa	40,000	19,000	18,000
Marathon Oil Co., Boynton	2,500	(*)	(*)
Marathon Oil Co., Bristow	5,000	(*)	(*)
Oklahoma City Refining Co., Oklahoma City	2,500	200	1,200
Phillips Petroleum Co., Okmulgee	6,000	4,500	3,500
Producers Oil Co., Bristow	2,500	1,000	1,000
Producers & Refiners Corp., West Tulsa	6,000	2,500	2,000
Pure Oil Co., Ardmore	5,000	1,200	1,200
Pure Oil Co., Muskogee	9,000	6,000	7,000
Rock Island Refining Co., Beckett	5,000	4,000	4,500
Sinclair Refining Co., Sand Springs	8,000	2,350	3,300
Sterling Refining Co., Oklahoma City	3,500	2,500	3,000
Sun Oil Co., Yale	5,000	3,000	2,500
Sunray Oil Co. (C. E. Wright, receiver), Allen	7,000	2,000	2,000
Sunshine Refining Co., Seminole	500	220	(*)
The Texas Company, West Tulsa	15,000	7,500	7,000
Texas Pacific Coal & Oil Co., Wynnewood	3,000	1,500	1,000
Tide Water Oil Co., Drumright	15,000	7,000	7,000
Western Oil Corp., Beckett	2,000	(*)	(*)
Wilcox Oil & Gas Co., Bristow	5,000	3,500	3,000
Wirt Franklin Petroleum Corp., Ardmore	4,000	2,050	2,000
Yale Oil Corp., Yale	2,000	350	500
York Refining Co., Oklahoma City	3,000	370	700
Total	312,900	148,945	148,900

*Shut down.

(Continued on Page 39)

West Texas Refineries

West Texas refiners will run approximately 5,500 bbls. less crude daily during April than they did in the previous month. This lesser throughput is the result of three additional plants shutting down for the month. The Pasotex Petroleum Co. will not process crude through its 14,000-bbl. plant at El Paso and the Grayburg Oil Co. has closed down its plant at San Antonio for an indefinite period. The Bluebonnett Oil & Refining Co. will also hold its plant idle at Wickett for the month.

This places the West Texas runs at a figure substantially below the East Texas group and at the present rate West Texas utilizing but 20 per cent of its capacity.

In the balance of the plants in this area operations will continue at about the same rate as during March. The low total run for this section again emphasizes the poor market for the refinery products throughout the territory.

North Central Texas

Refinery operations in the North Central Texas area will not show a material change during April compared with those of March. Total daily crude runs at these refineries will be 79,170 bbls. daily during April, while the scheduled runs during March totaled 77,405 bbls. There remains a large number of idle refineries in this area and in the accompanying list a total of 17 is shown. This number is slightly less than one-third of the total number of plants in the area. This fact again emphasizes the temporary advantage the East Texas refineries have over those plants located in North Texas. Both groups supply a common marketing territory but the ease with which low-priced crude may be got in East Texas places them on an unequal footing at the present.

Also, a large number of the idle plants are not equipped with cracking units with which to produce gasolines of high octane value and it seems evident that the only effective means of combating price as established by straightrun East Texas gasoline in the Mid-Continent market is to offer cracked gasoline of high octane value.

Kansas Refineries

During April refineries located in Kansas will process 4,000 bbls. more crude daily than during March. This small increase reflects the better seasonal market that Kansas has already witnessed and also that the Globe Oil & Refining Co. is now ready to approach the full operation of its new plant at McPherson.

Every refinery located in Kansas is operating, in contrast to the status of plants more directly in competition with the East Texas group.

Arkansas and North Louisiana

Arkansas refiners will run practically the same volume of crude daily during April as March and in North Louisiana the reduction in the runs at the plant of the Louisiana Oil & Refining Co. at Shreveport accounts for practically all of the change in runs in that area. In April the North Louisiana plants are scheduled to run 26,650 bbls. and in March the schedule totaled 26,950 bbls.

The status of the operating and shutdown plants in this area are not altered when compared to March.

In the automobile engine—

That's where anti-knock value counts, and nowhere else

Many a refiner makes high octane gasoline and then treats out much of the anti-knock value

But not with Universal Liquid Inhibitor

A gallon of this inhibitor (or less) to 100 barrels of gasoline keeps the anti-knock value all in and the gum all out

It costs less than other treating methods That is reason enough for using it

But it does a better job, too

Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
Owner and Licensor

Texas Independents Wire Views to the President

AUSTIN, Tex., Apr. 17.—The following telegram has been sent to President Roosevelt:

"The undersigned associations have a combined membership of 6,785 individuals engaged in the oil industry in Texas as independents. We challenge the right of John B. Elliott, H. H. Champlin, Joe Danciger, J. R. Parten, Myron Blalock, J. B. Blalock, Clint W. Murchison, R. F. Schoolfield, J. Edward Jones, E. B. Howard, W. J. Reid, H. E. Harris, and William H. Keck to speak the sentiments of the independent oil men of Texas. We condemn the practice of Murchison and Danciger and the other violators of proration orders in Texas which has been the chief factor in bringing about the present situation which threatens the existence of the oil industry. We strongly support and heartily approve your plan to make the transportation of oil and refined products in interstate and foreign commerce in excess of amounts of the allowables named by the conservation agencies of the states to be a felony. The collapse of the oil industry is imminent unless this relief is immediately extended. We sincerely believe that co-operation between the oil-producing states would be far more effective if Congress would at once authorize you to name an outstanding man as your personal representative to meet and work with the governors and the constituted authorities of the states in the effort to conserve the oil and gas resources of our nation. Unless this emergency is met immediately our banking and commercial institutions will be seriously threatened and thousands of individuals will be ruined and several thousand persons employed in the oil fields and refineries in Texas will be thrown out of work and our schools and our state and county governments will not have the necessary funds to meet operating expenses.

"East Texas Producers and Royalty Owners Association, by J. R. Pearson, vice president; East Texas Oil Land Owners Association, by Sam W. Ross, president; West Central Texas Oil and Gas Association, by J. D. Sandefer, Jr., president; North Texas Oil and Gas Association, by J. S. Bridwell, president; and Texas Oil and Gas Conservation Association, by Charles F. Roeser, president."

France Increasing Petroleum Imports

NEW YORK, Apr. 17.—Imports of crude and refined petroleum into France during the first two months of 1933 showed a sharp increase over imports for the comparable months of 1932, as follows:

	Metric tons—January-February—	
	1933	1932
Crude	235,202	55,439
Gasoline	282,047	236,844
Kerosene	22,214	35,228
Lub oil	30,946	28,156
Gas oil	66,281	55,727
Fuel oil	96,317	38,504
Other products	7,874	5,359

The large increase in crude oil imports is due to the increasing refinery operations in France, as new plants come into operation.

HOBBS ALLOWABLE PRODUCTION

HOBBS, N. Mex., Apr. 17.—The allowable production of the Hobbs Pool in the last half of April will be an average of 28,825 bbls. per day, that quantity being the nominations of the four companies that run and ship Lea County crude oil. The Shell Pipe Line Co. nominated 13,500 bbls.; Humble Oil & Refining Co., 9,630 bbls.; Atlantic Pipe Line Co., 4,500 bbls., and The Texas Company, 1,195 bbls.

SIR EDWARD MANVILLE DIES

The death is announced from London of Sir Edward Manville, chairman of the Phoenix Oil & Transport Co. He was also a director in the British Oil Development Co., which holds a concession in Iraq.

Elects James D. Collett as President and Condemns Divorcement of Pipe Lines

James D. Collett, Fort Worth, Tex., of the Texas oil-producing firm of O'Keefe & Collett, was elected president of the general Mid-Continent Oil and Gas Association at its annual meeting in Tulsa on April 14, succeeding William N. Davis, who refused a re-election after a dozen years at the head of the organization.

The association went on record in opposition to the divorcement of pipe lines from other branches of the oil industry and favored legislation by Congress excluding illegally produced or "hot" oil from interstate commerce.

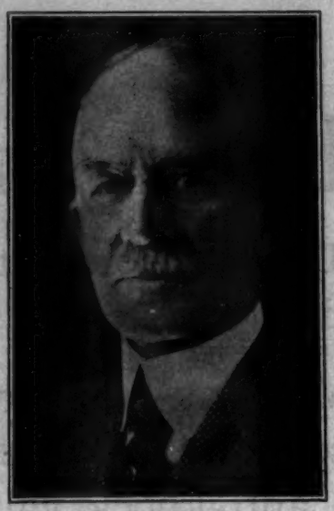
The association meeting was held following a luncheon in the Tulsa Club and lasted all afternoon. Following the election of Mr. Collett to the presidency, Harold B. Fell of Ardmore was elected vice president for Oklahoma; Tom C. Johnson of Wichita, vice president for Kansas; John R. Suman of Houston, vice president for Texas; David W. Harris of Shreveport, La., for Arkansas and Louisiana; and Van S. Welch of Artesia for New Mexico. Harry H. Smith was re-elected secretary and treasurer.

No Value in Divorcement

The proposal to divorce pipe lines from other branches of the industry and Representative Disney's bill which seeks to apply the commodity clause in the Hepburn act to interstate pipe lines, were discussed at length and the following resolution gives the views of the Mid-Continent oil men assembled:

"Resolved by the board of directors of the General Mid-Continent Oil and Gas Association that we oppose as disruptive of present orderly marketing methods in the petroleum industry and as of no possible value to the producers of oil the enactment of House Bill No. 4,681 by Representative Disney of Oklahoma, seeking to apply the commodity clause of the Hepburn act to interstate pipe lines.

"We regard any suggestion for legislation to divorce pipe lines from the other branches of the petroleum industry as so revolutionary in character and, from our experience, so opposed to the practical conditions under which crude oil must be produced, sold, transported and refined that any proposal therefor should receive the most exhaustive investigation before legislation to that end should be considered."



JAMES D. COLLETT

Favor Anti-Hot Oil Legislation

The production of illegal or "hot" oil was denounced by the directors who passed the following resolution on that subject:

"Resolved by the board of directors of the General Mid-Continent Oil and Gas Association representing producers of oil and other branches of the petroleum industry in the Southwest that we favor legislation by Congress to exclude from interstate and foreign commerce crude petroleum produced in violation of state conservation laws and likewise excluding from interstate and foreign commerce the products of such illegally-produced crude oil."

The directors gave the retiring president, William N. Davis, vice president of the Phillips Petroleum Co., a vote of confidence. Mr. Davis has been an active worker in the interest of Mid-Continent oil men. In the 12 years of his tenure of office he has been especially active in securing equitable taxes and was a leader in the movement for the unitization of oil field lease ownership, development work and production. His successor is an outstanding oil man in Texas and was president of the Texas division of the association for years and a vice president of the general association. He has a high standing among oil men and under his leadership the directors look for a continuance of the association's useful activities.

Taxation Committee Meets

The general taxation committee of the association held an all-day meeting. The following were elected to the committee on state and local taxation: G. E. Thompson, Tide Water Oil Co., Tulsa, general chairman; J. C. Wallingford, Amerada Petroleum Corp., general vice chairman; Alfred J. Wells, Carter Oil Co., chairman for Oklahoma; J. A. Lenertz, Empire Companies, Bartlesville, chairman for Kansas; John P. Morgan, Sun Oil Co., Dallas, chairman for Texas; John Hammerman, Jr., Gulf Production Co., Houston, chairman for Louisiana and Arkansas; O. C. Cash, Stanolind Companies, Tulsa, chairman for New Mexico; Leo Myer, Mid-Continent Petroleum Corp., Tulsa, chairman for outside states; J. H. Hill, The Texas Company, Tulsa, chairman for all states, excise taxes; F. B. Plank, Empire Companies, Bartlesville, chairman for all states, income taxes; Clarel B. Mapes, Mid-Continent Oil and Gas Association, Tulsa, general secretary. This is a large committee and one of the most important in associational work. There are subcommittees for various Mid-Continent oil states and subcommittees that take care of every variety of taxation, state and national.

Speaking of Empyreumatic Oil, How Hard It Is to Remember Dates!

By A. P. EYE

Correspondent Extraordinary

CLEVELAND, Ohio, Apr. 19.—One of those preconvention huddles that add charm to the semiannual meetings of the National Petroleum Association was discussing lubricating oils, marketing problems and so on in the lobby of the Cleveland Hotel this afternoon, and having a thoroughly enjoyable time, when Charles L. Suhr, president of the Pennzoil Co., Oil City, Pa., asked casually, "Say, can any of you fellows tell me about what year the first empyreumatic oils were manufactured?"

His glance happened to rest on Dick Wotowitch, chief fire marshall of the association, as he spoke, and the latter, trying not to look disconcerted, said he couldn't recall the exact date. It was something to which he hadn't paid much attention anyway, as he had the sciatic kind and the doctors hadn't been able to do anything for it beyond advising him to have his teeth out.

S. Messer, vice president of the Quaker State Oil Refining Corp., Oil City, thought it was a year or two after the War of the Pragmatic Sanction, though he admitted he was not good at remembering dates.

L. V. Nicholas, Chicago, oil marketer at large, scoffed: "Nowhere near that long ago, though really I had forgotten there ever was a war over the pragmatic sanction. One of those Balkan outbreaks, wasn't it? Now these, these emp—these oils Charlie is talking about—were just coming into use when Joe Sibley brought out his Galena Signal oil, which put other products of that day in the shade."

E. M. Lyons, president of the Tiona Refining Co., Philadelphia, Pa., rubbed his chin uneasily and believed Mr. Nicholas was right. "Along about 1870, I'd say. These empyreumatic oils were pretty popular for a while and might have made history if they had been properly advertised. Funny, isn't it, how an invention will have its day and then be forgotten? Why, I don't believe I'd thought of those empyreumatic oils in 10 years."

And the session adjourned, leaving the matter of empyreumatic oils as unfinished business.

APPALACHIAN GEOLOGISTS

LEXINGTON, Ky., Apr. 17.—A meeting of the Appalachian Geological Society was held at the University of Kentucky, Lexington, Ky., on April 8, attended by members from Ohio, Kentucky and West Virginia. Papers were presented on "Nature and Mechanics of Low-Angle Overthrusting as Illustrated by the Cumberland Overthrust Block," by Prof. John L. Rich, of the University of Cincinnati; "Occurrence and Structure of the St. Peter and Cotter Formations as Revealed by Deep Test Wells on the Cincinnati Arch," by Profs. A. C. McFarlan and R. P. Meacham, of the University of Kentucky; "The Work of the Kentucky Department of Agriculture With Reference to Coals and Oil Shales," by Prof. C. S. Crouse, of the University of Kentucky; and "Relation of Fault Systems to Major Uplifts in the Appalachian, Ozark and Gulf Coal Regions," by Prof. W. H. Bucher, of the University of Cincinnati.

The society has laid plans for a field trip to the Pine Mountain, Big Stone Gap and Cumberland Gap localities of Kentucky and Virginia. The trip will be from May 4 to May 7 inclusive, and will be attended by members of the society together with faculty and geology students of the near-by universities and colleges. Persons interested in taking the trip should write to Coleman D. Hunter, Kentucky West Virginia Gas Co., Ashland, Ky., who is in charge of arrangements.

APPOINT GOSS SUPERINTENDENT

Charles H. Goss has been appointed general superintendent of the Franklin Creek Refining Co., to succeed the late Curtis E. McElhaney.

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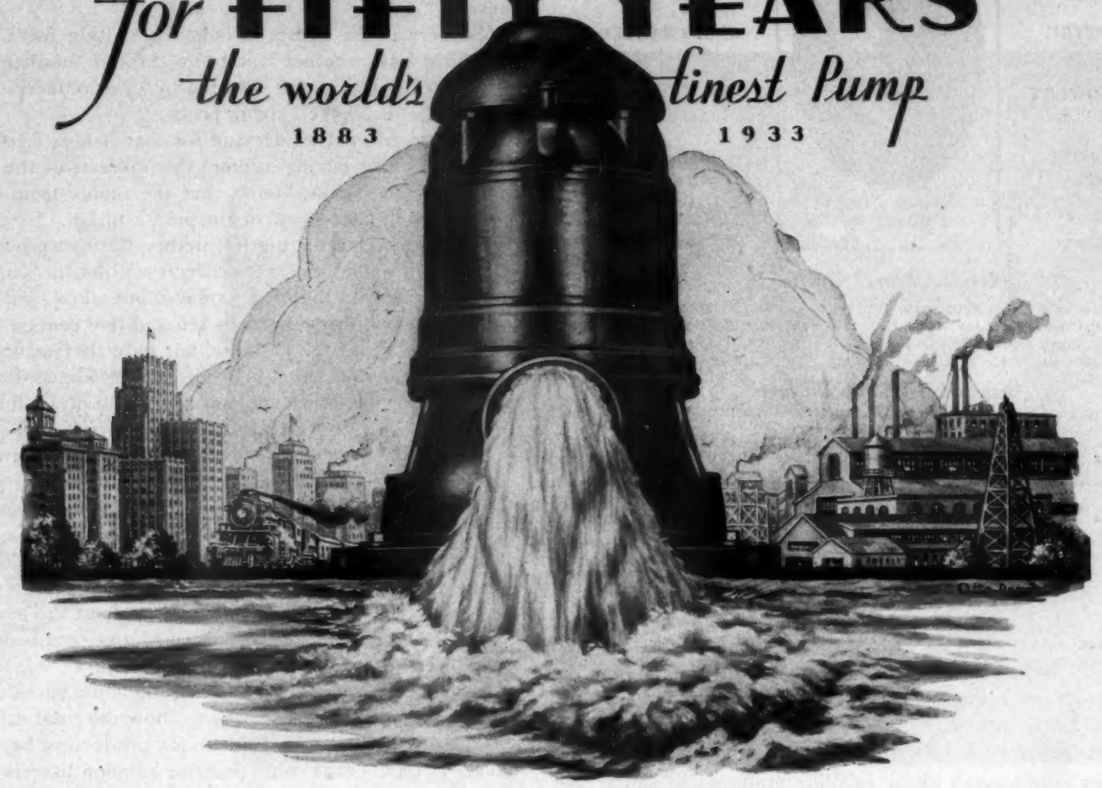

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Member, Audit Bureau of Circulations

Greed for Gain

Here we are at the opening of the main consuming season with prices all shot to pieces. Why?

If any oil producer, refiner or marketer will sit down and seek the answer, honestly and without regard to his own individual profit, he can come to but one conclusion—reckless overproduction.

If there was only enough oil or gasoline produced to supply the demand every producer and refiner would be getting a fair price for his product. It is only because a few, greedy for personal gain, insist on producing all they can and selling it for what they can get, that the market is where it is today.

This is so plain and has been explained so often that everybody in the oil business ought to know it and does know it. Yet men are found persisting in overproduction and trying to cover up their selfishness by loud lamentations about monopoly and constitutional rights when all they have in mind is their individual chance to make a profit.

There is no high principle involved—nothing but profit. This is thoroughly understood in the oil business and is getting to be just as well understood by the legislatures and the public.

Blowing away the fog, the stark fact stands out that the only motive for overproducing is the money than can be made out of it by underselling the market.

Talk about protecting the public from monopoly is all eyewash. Every price cutter that ever lived posed as a benefactor of the public. In what way?

Price cutting, based solely on the hope of getting trade away from the other fellow, breaks down the entire market, demoralizes business, paralyzes industry thus lowering wages, forcing unemployment and generating depression.

Who benefits but the price cutter—for a time. Eventually he, too, finds himself engulfed by the general calamity that he has invited.

If cut prices were the summit of earthly happiness why don't Americans move to China where prices are based on two cents a day for labor?

Then there is this "stuffed shirt" of monopoly, forever being shoved forward. What is the purpose of monopoly if it is not profit? Where there is no profit how can there be a monopoly?

Who is fixing prices in the oil industry today? It is not the big companies. It is the overproducers who are beating down prices by underselling the market.

Of all businesses, talk of monopoly in the oil business is the silliest because if the price of oil ever rose to where it could be produced at a profit there would be enough wildcatters going to work to guarantee there would be all the oil needed at that price.

Monopoly, indeed! Look at what "Dad" Joiner did to the oil business.

So here is the entire oil industry waiting for a decision in East Texas to show whether it is to go through another main consuming season at distress prices dictated by overproducers or whether it is to be allowed to have a living profit.

The present market demand for that field is 350,000 barrels. Any Texas authority, having in mind the interests of the State and of the people of East Texas, knows that the supply from that field should not be above that demand or the price will fall.

It does not matter much whether the overproduction is 150,000 barrels or 500,000 barrels the effects will be the same—all the crude produced, not only that overproduced but all oil, will be sacrificed for whatever it will bring, perhaps ten and five cents a barrel.

In addition, all the gasoline, not only that made from this overproduced crude but from all crude, will be forced down to a common level, robbing the entire industry of hope of profit for another season.

Talk of allowing 600,000 or 800,000 barrels of production in East Texas is indefensible. It is deliberately throwing away from 250,000 to 450,000 barrels of East Texas wealth to benefit a few exploiters while the rest of the great oil industry is being impoverished.

Even in far away Rumania the stabilization of the European market awaits assurance that it will not be demoralized by American overproduction. Here at home continued overproduction in East Texas will hold back the industry throughout the country just at the time its stabilization is most needed to give us a boost out of the depression.

Absurd calculations of potential production based on the two hours test of some 300 wells assuming to show the total daily production of 10,000 wells afford no argument for production beyond market demand. If East Texas could produce a billion barrels a day and there was a market for only two million barrels daily would that be any reason for wasting the overproduction?

There is only one common sense view to take of East Texas allowable, the quantity that is needed by the market and that can be sold at living price.

No more is needed by the consuming public, by the industry at large. It is needed only by those who want to make a quick profit regardless of effects on anybody else.

It might be supposed from the continual chopping and changing that has been going on in East Texas that the task of regulation is tremendously complicated. It is not, if approached with this fundamental fact kept constantly in mind; any production over the demand is waste and means sacrifice.

With the total needed readily ascertainable the job of alloting that allowable fairly and honestly among the 10,000 wells is not insuperable, given a sincere intention of accomplishment.

An approximation, the justice of which will satisfy everyone but those who do not want justice, can be reached if really sought.

If the present Railroad Commission cannot or will not do that then the legislature should take prompt action to provide a commission that can and will.

Oil means too much to Texas to allow the existing situation to be prolonged indefinitely.

But whatever the new order may be it will be valueless unless it is backed by actual enforcement. The so-called shutdown while the potential tests were being taken is commonly reported to have been ignored by the same persons who have been ignoring all other orders.

More even than an effective order it is essential that there be determination to enforce it, something not yet tried in East Texas.

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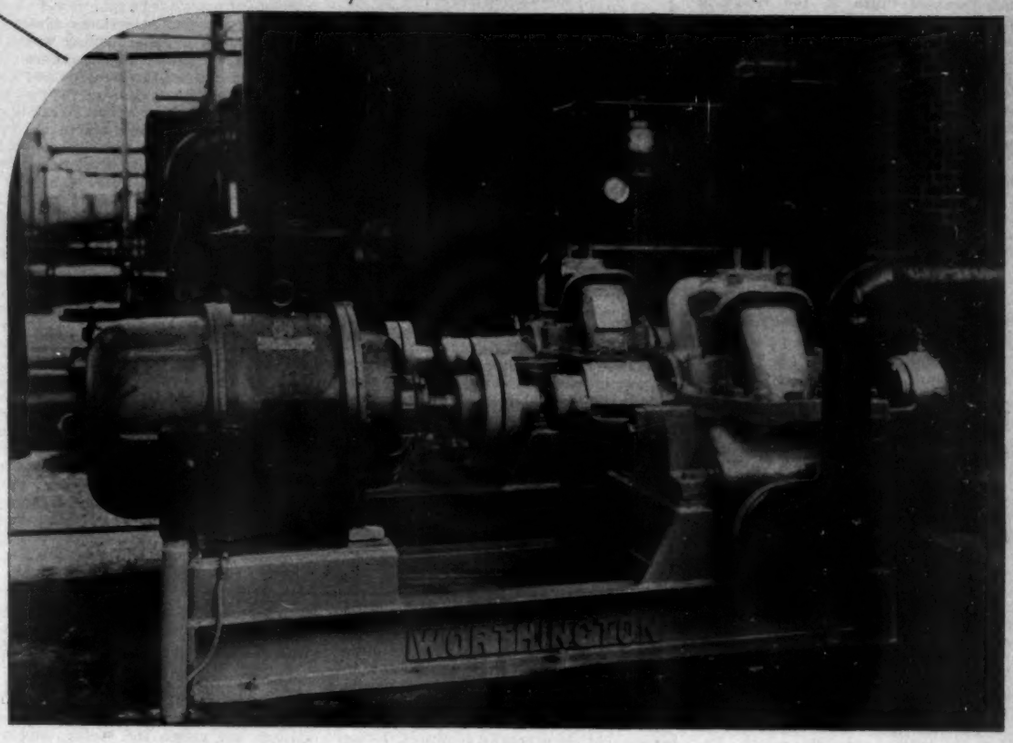

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Gasolines Again Decline in Oklahoma Market; Steady Movement in Kerosene and Distillate

By C. O. WILLSON

The refinery market in Oklahoma (Group 3) entered the last half of April with no definite indications that the much-discussed "turn in the road" in tank car prices was any nearer than it was a week or a month ago. From week to week sellers of refinery products throughout the Mid-Continent and Middle West have been expecting that something would develop in the crude oil situation which would form the basis for a recovery in their prices. The failure of any of these expectations to materialise has resulted in a somewhat apathetic attitude on the part of sales managers and others charged with the responsibility of merchandising policies of their individual companies. Their operations are of the makeshift type and will continue thus until they have something tangible on which to base plans.

At the start of the week both refinery gasolines and natural gasoline prices were one-eighth cent lower than last week on practically all grades. The 26-70 grade of natural gasoline was moving slowly at a new low price of 1⅛ cent per gallon or 47 cents per barrel. The new prices were not stimulating business. In the refinery end, the low octane U. S. Motor gasoline was readily available in Oklahoma to the trade at a low of 1⅞ cents with resale material reported as low as 1⅝ cents. The middle octane bracket material was as weak as the low octane. Several refiners reported a seasonal improvement in demand from their own bulk stations and regular jobbers, but little of this business found its way to the spot market where trading continued dull.

The spot trading in kerosene and distillate did not appear so active the first of the week, but prices were holding with a large quantity of business already placed for delivery over the month. Regardless of the volume of new business, it was not expected that the markets for kerosene would weaken before the first part of next month. Resumption of large interrefinery buying and a continuance of a steady demand from jobbers could easily result in additional kerosene price advances. Those in touch with the market believe that the generally depressed feeling within the oil business brought about by conditions in the crude oil and gasoline divisions robbed the refiners of the opportunity for a highly satisfactory kerosene market a development justified by conditions in both supply and demand.

Other products were unchanged. The railroad and industrial demand for fuel oils has not shown the spring improvement hoped for and price concessions were reported in several small deals. The large quantity of high cold test fuel oil and gas oil available from East Texas has resulted in many investigations as to how these fuels can be used by consumers. Various blends with low cold test material have been tried out and it is felt with the arrival of warm weather these fuels are to furnish additional competition with the products coming from the older refineries which, due to the inclusion of cracking in plant operations, are generally of low cold test.

Fear Retail Situation

Veteran market observers are now predicting a general collapse in tank wagon and retail markets unless the efforts being made to curtail the oversupply of crude oil are successful. According to these observers, the difficulties in the retail end are more serious than those in the tank car division. There has not been the confusion in tank car markets that might be expected under conditions that have prevailed for several months but it is becoming more and more apparent that the troubles are being passed on to those in charge of consumer markets. There are charges and countercharges that both large and small companies in an effort to provide additional outlets for gasoline for which there is no tank car demand are offering every conceivable inducement to dealers and consumers.

The situation in Tulsa, an important distributing center with more than 25 major and semimajor companies represented in the retail distribution, is a case in point. For several weeks distributors have attempted to maintain the following retail gasoline prices: Third grade, 12 cents; regular, 15 cents, and Ethyl Gasoline, 18 cents. These prices include 4-cent state and 1-cent Federal taxes.

Some cut-rate competition developed

Refined Market Barometer

Scattered weakness in several products was reported in refinery tank car markets throughout the United States. Although a better feeling was reported in eastern marketing circles in regard to gasoline, prices were lower in the Middle West and Mid-Continent. The demand for kerosene and tractor distillate at interior points continues heavy but a slowup in the export movement of kerosene has made the constal markets easier. Weakness in fuel oils and gas oils is largely confined to local areas where operators of new plants are having difficulty in securing outlets for high cold test material. The market for steam refined stocks and bright stocks was generally unsettled and prices were lower at coastal points. More export inquiries were received for paraffin wax.

Mid-Continent—Trend toward lower prices in all grades of refinery gasolines and natural gasolines. Spot trading in these products continues dull. Heavy movement of kerosene and tractor distillates at firm prices. Distress fuel oil and gas oil coming largely from East Texas refineries important factor in entire Mid-Continent market. Routine movement of lubricants and wax.

East Coast—Better demand brings predictions of higher gasoline prices at refineries. Fuel oils firm with sharp curtailment of imports. Diesel oils steady. Gas oil movement largely confined to contracts. More inquiries for wax. Prices on several grades of steam refined stocks and bright stocks lower.

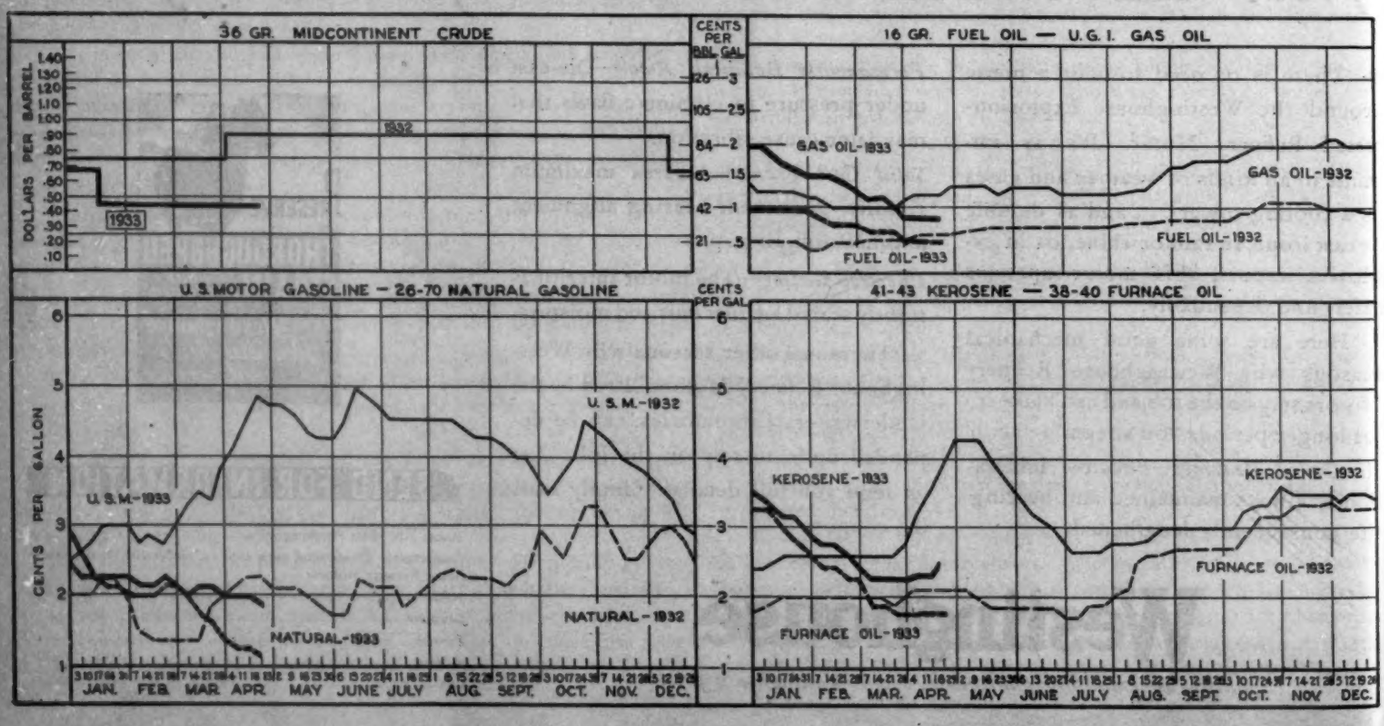
Chicago—Gasoline prices lower with slow demand. Special naphthas firm. Kerosene and tractor distillates firm. Gas oils weak. Slow industrial demand for fuel oils.

Gulf Coast—Gasolines firm. Less demand for kerosene. Gas oils weak. Fuel oils steady. No change in lubricants.

Pennsylvania—Market for steam refined stocks and bright stocks unsettled with many complaints of price cutting. Gasoline and kerosene steady. No change in wax.

California—Domestic gasoline market holding. Fair demand for fuel oil and gas oil. Good movement of distillates.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



recently from small station operators selling unbranded gasolines and a third grade has been sold as low as 9 cents per gallon, including taxes. It was also charged that several of the larger companies were offering special concessions to dealers and retail customers. In the matter of dealers it was claimed that the guaranteed margin was widened, free equipment offered and excessive prices paid for rentals and leases. In retailing, the charges centered around the much-discussed commercial discounts. Where these charges started or how accurate they were no one seems to know. The results, however, became apparent a week ago when 2-cent discounts were openly allowed to cash buyers. This plan immediately spread and in a few days the discounts were allowed to all buyers.

The situation in Tulsa is representative of conditions that prevail at a majority of consuming points throughout the middle western and southwestern states. The trouble can be traced back to conditions in both supply and demand according to one company executive. On the supply end, he points out, many managers of bulk and retail stations are being urged to provide outlets for more gasoline despite the known fact that actual consumption is less than a year ago, a situation which under healthy market conditions would mean that each company would take its share of the loss.

Roadside Plants

In this connection the operations of a large number of new skimming plants of small capacity are being directly reflected in retail markets and contributing to the unsatisfactory price conditions. Reports from the Rocky Mountains state that 100 or more roadside stills which are being operated in Montana, Wyoming and Colorado are being duplicated in Texas, Oklahoma, Kansas, Arkansas and Louisiana. These stills—usually of a few barrels daily capacity—are operated with a high-gravity crude oil from which yields of gasoline, kerosene distillate and a residual product are obtained. The products are sold locally; in some cases one filling station adjoining the plant furnishes an outlet for the gasoline and the distillate which is sold as tractor fuel.

It is difficult to figure how some of these plants could be operated profitably even if the crude oil was given to the owners of the plants. In many cases the owners have to truck the crude oil a considerable distance and the products also moved by truck after they have been distilled from the crude oil. The fuel and other operating costs naturally are high based on yields in such an operation. Added to this is the fact that the products, especially the gasoline, are inferior in quality. This matter of costs has led to the charges that in some instances the gasoline tax is being evaded. If such is the case, there have been few charges brought by either Federal or state officials and the gasoline made available at scattered points is one of the main reasons why large distributors are unable to establish and maintain prices in line with their large investments and costs in offering superservice to car owners.

Another angle to this problem of cheap sources of supply are the long truck hauls being made from refineries located in East Texas and other points. East Texas gasoline is being transported into West Texas and the Texas Panhandle, several hundred miles from the refineries. In many of these cases it is charged that all or part of the taxes are not being paid. It is contended that the long hauls would make it impossible to operate profitably if all taxes were paid. A large part of the gasoline sold in East Texas is moved by truck. This competition has practically wrecked the business of many of the older distributors in Texas and adjoining states.

These retail conditions are mentioned here because of their direct connection to tank car markets. A consumer market dominated by products coming from crude oil sold from 25 to 50 per cent under the posted schedules and tied in with evasion of state and Federal taxes is not the right background to bring tank car prices back to satisfactory levels. The bulk of the gasoline moved out daily from Oklahoma and other Mid-Continent refineries is sold on guaranteed minimum differential under these tank wagon and retail prices. If conditions do not improve it is feared that major distributors will be forced to make general reductions in their retail prices which immediately would be reflected in the net tank car prices at Mid-Continent refineries.

Gasoline and Naphtha

The "battle of octanes" was very apparent in the little spot trading that developed in the Oklahoma market over the past week. A few refiners in order to obtain business were offering bargains in high octane material. The tendency of these sellers is to offer gasoline of better than 60 octane on a low octane basis and a premium octane grade at the low of the middle octane bracket. There are other forms of concessions in which wide differentials under the published prices for a particular grade are being offered. This material offered for resale by the first buyer is to a large extent the controlling factor in the market.

Prices to the trade as previously explained ranged up from 1⅞ cents for the U. S. Motor grades. A few small resale deals were reported in which the seller guaranteed better than 60 octane material at a price of 1¾ cents. These octane ratings usually are on the C.F.R. laboratory method and not the new C.F.R. motor method which was adopted the first of the month by many of the larger refiners. Under the new method many of these gasolines now given a rating of 60 to 62 would be between 55 to 58.

Natural Gasoline

Several of the large manufacturers are running a part of their production to storage. At the same time some of the buyers are also storing at Gulf Coast terminals. These buyers and sellers are confident that with the arrival of the season of heavy gasoline consumption there will be additional outlets for these gasolines at prices which will show a substantial profit over the present prices plus storage costs. With present prices on a parity with posted schedules for high gravity crude oils, this conclusion regarding the future appears as sound as any prediction could be in the oil business at this time.

The 26-70 grade was moving in limited quantities at 1⅛ and 1¼ cents in both Oklahoma and Texas. It was predicted that if sufficient business failed to develop at these price levels there would be important plant shut downs throughout the Mid-Continent. The 18-55 grade was fairly active at a price range of 1⅝ to 1⅝ cents. The lower vapor pressure grades were one-eighth cent lower.

Kerosene and Distillate

Specification water white kerosene of 41-43 gravity was bringing a low of 2½ cents the first of the week. Due to the favorable prices in relation to gasoline the trend in refinery operations is to secure the maximum yield of kerosene and it was stated the first of the week that a few operators who have been out of the market for weeks have limited quantities to offer. The only low priced material reported was confined to the high endpoint grades having a poor burning test.

The 32-36 gravity, low flash distillate is more freely offered at a low of 1⅝ cents in sales to the trade. The higher gravity straw and prime white grades are firm at last week's prices.

Fuel Oil and Gas Oil

The Oklahoma fuel market continues to have the competition of East Texas topped crude of 22 to 26 gravity at a price as low as 5 cents per barrel with gas oil at 15 cents per barrel. With a freight rate differential of only 6 cents per 100 pounds over the Oklahoma market in northern shipments, it is impossible for Group 3 operators to compete. However, they are in most cases not attempting to meet these prices and are selling for short hauls where the East Texas competition is a minor factor. Prices on the several grades of fuel oil and gas oil in Oklahoma are the same as last week.

Lubricants

Prices on the 150-160 zero to 10 bright stock in Oklahoma range from 12¼ to 12¾ cents per gallon exclusive of Federal taxes. It is predicted that prices will continue at these levels until there is improvement in the Pennsylvania market. Steam refined stocks are slow and trading in neutral oils is confined to regular customers. The wax market also is inactive.

MINNESOTA WARNS SHIPPERS

Refiners are warned by G. H. Fuller, chief clerk of the Minnesota oil inspection division, that many of their jobbers and salesmen are offering "tractor fuels" which cannot be classified according to the state specifications, and which the oil inspection division cannot permit to be unloaded for reasons related to tax evasion and safety. The questioned specifications follow: Gravity, 40-46; initial, 160-200; endpoint, 450-550; open cup flash, 75-95; color, straw to red. In regard to materials of these general specifications the official says: "We understand that it is sometimes billed as naphtha or distillate. This department refuses to allow this product to be unloaded. It could be readily burned in any truck or automobile in hot weather. If they attempt to bring it in as fuel called distillate or naphtha, the flash is so low it is dangerous."

EMPLOY ADDITIONAL MEN

PORT ARTHUR, Tex., Apr. 15.—The Gulf Refining Co. is taking on additional men at its local refinery. Approximately 900 have been added to the payrolls in recent weeks. Only former employes are being engaged.

American Petroleum Institute Weekly Refinery Statistics

Figures below reported for week by American Petroleum Institute. (1) Per cent refinery capacity represented. (2) Daily average crude runs to stills. (3) Total motor fuel stocks. (4) Gas oil and fuel oil stocks. All figures in 42-gallon barrels.

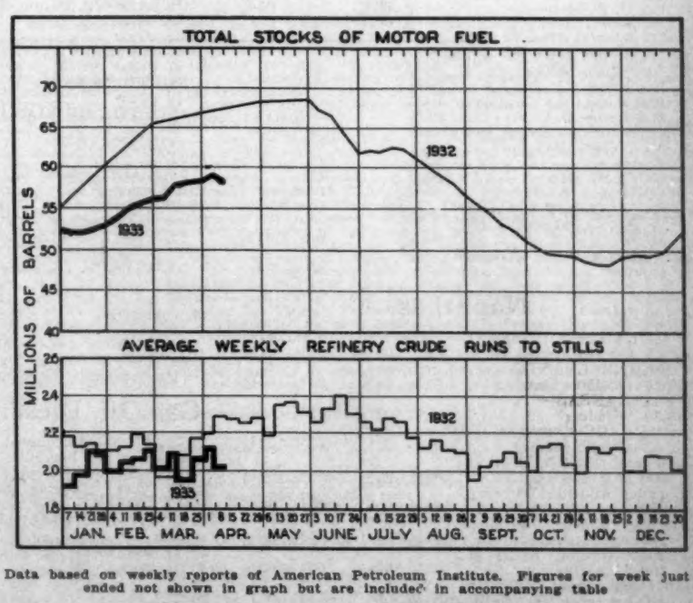
Week Ending April 15, 1933, Compared to Week Ago

	Week ending April 15, 1933				Week ending April 8			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	99.1	433,000	16,340,000	6,105,000	99.1	402,000	16,078,000	5,882,000
Appalachian	95.0	76,000	2,018,000	823,000	95.0	64,000	2,005,000	861,000
Ind., Ill., Ky.	97.5	305,000	8,760,000	3,472,000	97.5	296,000	8,891,000	3,460,000
Okla., Kans., Mo.	84.9	225,000	5,428,000	2,943,000	84.9	198,000	5,462,000	2,957,000
Inland Texas	56.4	83,000	1,666,000	2,104,000	56.4	78,000	1,671,000	2,132,000
Tex. Gulf	97.7	439,000	5,950,000	6,161,000	97.7	393,000	6,066,000	6,261,000
La. Gulf	97.3	106,000	1,881,000	1,830,000	97.3	87,000	1,941,000	2,064,000
N. La. and Ark.	88.5	43,000	318,000	639,000	85.5	39,000	386,000	655,000
Rocky Mtn.	90.8	28,000	1,473,000	647,000	90.8	26,000	1,485,000	635,000
California	94.6	463,000	14,522,000	98,642,000	94.6	430,000	14,545,000	98,387,000
Total U. S.	91.6	2,201,000	58,356,000	123,372,000	91.6	2,013,000	58,440,000	123,294,000

Total motor fuel stocks Bureau of Mines basis 59,360,000 bbls.

Week Ending April 15, 1933, Compared to Year Ago

	Week ending April 15, 1933				Week ending April 16, 1932			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	99.1	433,000	16,340,000	6,105,000	100.0	444,600	6,959,000	5,432,000
Appalachian	95.0	76,000	2,018,000	823,000	91.8	93,300	1,803,000	1,110,000
Ind., Ill., Ky.	97.5	305,000	8,760,000	3,472,000	98.9	318,100	6,659,000	4,166,000
Okla., Kans., Mo.	84.9	225,000	5,428,000	2,943,000	89.6	239,600	3,909,000	3,094,000
Inland Texas	56.4	83,000	1,666,000	2,104,000	....	122,200	1,595,000	2,730,000
Tex. Gulf	97.7	439,000	5,950,000	6,161,000	99.8	379,100	6,832,000	5,762,000
La. Gulf	97.3	106,000	1,881,000	1,830,000	100.0	121,000	1,957,000	3,699,000
N. La. and Ark.	88.5	43,000	318,000	639,000	....	51,000	140,000	661,000
Rocky Mtn.	90.8	28,000	1,473,000	647,000	89.4	32,300	1,974,000	635,000
California	94.6	463,000	14,522,000	98,642,000	96.7	471,400	14,855,000	98,585,000
Total U. S.	91.6	2,201,000	58,356,000	123,372,000	95.1	2,272,600	46,732,000	122,784,000



Data based on weekly reports of American Petroleum Institute. Figures for week just ended not shown in graph but are included in accompanying table

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

EXCLUSIVE OF TAXES

The following quotations are exclusive of the Federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils, which became effective June 21, 1932.

Refinery Gasolines

	Apr. 18		Apr. 11	
OKLAHOMA (Group 3)—				
*U. S. Motor grades:				
Regular	.02½	.02⅝	.02¼	.02½
Premium	.02⅝	.02⅞	.02½	.02⅝
Third grade	.01⅞	.02	.02	.02¼
60-62 400 grades:				
Regular	.02¼	.02⅜	.02⅝	
Premium	.02½		.02⅝	
Third grade	.02	.02½	.02⅜	
64-66 390	.02½	.02¼	.02¼	.02½
64-66 375	.02¼	.02⅝	.02⅝	.02⅝
68-70 350	.02⅝	.02⅝	.02⅝	.02¾
NORTH TEXAS—				
U. S. Motor grades:				
Regular	.02⅛	.02¼	.02¼	.02⅜
Premium	.02⅝	.02⅞	.02½	.02¾
Third grade	.01⅞	.02	.02	.02¼
60-62 400	.02	.02¼	.02½	.02¼
64-66 390	.02½	.02¼	.02¼	.02½
64-66 375	.02¼	.02⅝	.02⅝	.02½
64-66 360	.02½	.02¾	.02⅝	.02⅞
†NORTH LOUISIANA—				
U. S. Motor grades:				
Regular	.02¾		.02¾	
Premium	.03		.03	
Third grade	.02½		.02½	
60-62 400	.02⅝	.02¾	.02⅝	.02¾
†ARKANSAS—				
U. S. Motor grades:				
Regular	.02⅝		.02⅝	
Premium	.02⅞	.03	.02⅞	.03
Third grade	.02⅝	.02½	.02⅝	.02½
CHICAGO (Based on Oklahoma Group 3)—				
U. S. Motor grades:				
Regular	.02⅛	.02⅜	.02¼	.02½
Premium	.02⅝	.02⅝	.02½	.02¾
Third grade	.01⅞	.02½	.02	.02¼
60-62 400	.02	.02¼	.02½	.02¼
64-66 375	.02⅝	.02⅝	.02⅝	.02⅝
68-70 360	.02⅝	.02⅞	.02⅝	.02⅞
Aviation fighting grade	.03	.03¼	.03⅛	.03⅜

*Octane Ratings—The following octane ratings apply to the three grades of U. S. Motor gasoline: Regular, 57-65 octane number; premium, above 65 octane number; third grade, below 57 octane number.

†For Arkansas, Louisiana and Mississippi delivery.

PENNSYLVANIA (inland refineries)—				
U. S. Motor	.04½	.04¾	.04½	.04¾
60-62 400	.04⅝	.04¾	.04⅝	.04¾
64-66 375	.05	.05⅛	.05	.05⅛
68-70 350	.05⅛	.05¼	.05⅛	.05¼
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.04¾	.05¾	.04½	.05¾
58-60 400	.05½	.06½	.05¼	.06½
EAST COAST—				
U. S. Motor, below 65 octane:				
New York (Bayonne)	.04¾		.04¾	
Boston	.04¾		.04¾	
Baltimore	.04¾		.04¾	
Charleston, S. C.	.05½		.05½	
U. S. Motor, 65 octane and above:				
New York (Bayonne)	.05		.05	
Boston	.05		.05	
Baltimore, Md.	.05		.05	
Charleston, S. C.	.05¾		.05¾	
GULF COAST (domestic)—				
U. S. Motor, 65 octane and above	.04¼		.04	.04¼
U. S. Motor, below 65 octane number	.03¾	.04	.03½	.04

Naphthas

	Apr. 18		Apr. 11	
OKLAHOMA (Group 3)—				
50-52 450 (blending)	.02	.02½	.02½	.02¼
PENNSYLVANIA (inland refineries)—				
50-54 430-450 (blending)	.04¼	.04⅜	.04¼	.04⅜
†ARKANSAS—				
48-50 (blending)	.02¼	.02½	.02¾	.02½
CHICAGO (Based on Oklahoma Group 3)—				
50-52 450 (blending)	.02	.02¼	.02	.02¼
Cleaners' naphtha, 50-58 gr., 200 i.b.p.-320 e.p.	.05¼	.05½	.05¼	.05½
Lacquer diluent, 180 i.b.p.-250 e.p.	.06½	.06¾	.06½	.06¾
Lacquer diluent, 140 i.b.p.-200 e.p.	.07½	.08	.07½	.08
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.05¼	.05½	.05¼	.05½
Stoddard solvent, 300 i.b.p.-410 e.p., over 100° flash	.04¾	.05	.04¾	.05
Pet. thinner, 290, 300 i.b.p.-415 e.p., over 85° flash	.04	.04¼	.04	.04¼
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.05	.05¼	.05	.05¼
Petroleum spirits	.03⅞	.04	.03⅞	.04

Natural Gasolines

	Apr. 18		Apr. 11	
OKLAHOMA (Group 3)—				
Grade 18-55	.01½	.01⅝	.01⅝	.01⅝
Grade 26-70	.01⅝	.01¾	.01¾	
Grade 30-70	.01⅝		.01¾	
*Low pressure grades:				
15 lb. v.p. (max.)	.01¾	.02	.01⅞	.02⅛
11 lb. v.p. (max.)	.02⅛	.02¼	.02¼	.02⅜
NORTH TEXAS—				
Grade 18-55	.01¼		.01⅝	
Grade 26-70	.01½	.01¾	.01½	
Grade 30-70	.01⅝		.01¾	
*Low vapor pressure grades:				
15 lb. v.p. (max.)	.01¾	.02	.01⅞	.02⅛
11 lb. v.p. (max.)	.02⅛	.02¼	.02¼	.02⅜
NORTH LOUISIANA—				
Grade 26-70	.01⅜		.01½	
CALIFORNIA—				
75-78 375	.03½	.04	.03½	.04

Kerosenes

(All kerosenes water white)

	Apr. 18		Apr. 11	
OKLAHOMA (Group 3)—				
41-43	.02½	.02⅝	.02⅝	.02½
42-44	.02⅝	.02¾	.02½	.02⅝
NORTH TEXAS—				
40-41	.02¼		.02¼	
41-43	.02⅝		.02⅝	
†NORTH LOUISIANA—				
41-43	.02¾		.02¾	
42-44	.03		.03	
†ARKANSAS—				
41-43	.02¾		.02¾	
PENNSYLVANIA (inland refineries)—				
45	.04½	.04¾	.04½	.04¾
46	.04½	.04¾	.04½	.04¾
47	.04¾	.05	.04¾	.05
CHICAGO (Based on Oklahoma Group 3)—				
41-43	.02½	.02⅝	.02⅝	.02⅝
42-44	.02⅝	.02¾	.02½	.02¾
*CALIFORNIA—				
38-40 high burning test	.03½	.04½	.03½	.04½
NEW YORK (Bayonne, N. J.)—				
41-43	.05¼		.05¼	
GULF COAST (domestic)—				
41-43 water white	.03¾	.04	.04	.04¼

*For Pacific Coast consumption.

†For Arkansas, Louisiana and Mississippi delivery.

Furnace Oils and Tractor Fuels

	Apr. 18		Apr. 11	
OKLAHOMA (Group 3)—				
32-36 straw	.01¾	.01⅞	.01¾	.01⅞
36-38 straw	.01¾	.01⅞	.01¾	.01⅞
38-40 straw	.01¾	.01⅞	.01¾	.01⅞
39-41 prime	.01⅞	.02	.01⅞	.02
NORTH TEXAS—				
38-40 straw	.01¾	.01⅞	.01¾	.01⅞
†NORTH LOUISIANA—				
36-40	.02½	.02¾	.02½	.02¾
†ARKANSAS—				
32-36	.02½	.02⅝	.02½	.02⅝
CHICAGO (Based on Oklahoma Group 3)—				
32-36 straw	.01¾	.01⅞	.01⅞	.02
38-40 straw	.01⅞	.02	.01⅞	.02
38-40 prime white	.01⅞	.02½	.01⅞	.02⅛
PENNSYLVANIA (inland refineries)—				
40-41 prime white	.03¼	.03½	.03¼	.03½
NEW YORK (Bayonne, N. J.)—				
32-36	.04		.04	
36-40	.05		.05	
21 (industrial)	.03½		.03½	

Above prices are for distillate oils of zero cold test under 190° F. flash and good odor.

†For Arkansas, Louisiana and Mississippi delivery.

Gas Oil, Diesel Oil and Fuel Oil

Gas oil (G.O.) quoted per gallon basis; Diesel oil and fuel oil per barrel.

	Apr. 18		Apr. 11	
OKLAHOMA (Group 3)—				
32-36 (G.O.) cracking stock	.00⅞	.01	.00⅞	.01
U.G.I. (G.O.)	.00⅞	.01	.00⅞	.01
32-36 zero to 15 (G.O.) high flash	.01¼	.01⅜	.01⅜	.01½
28-30, zero to 10	.60	.65	.60	.65
26-30, zero to 10	.50	.60	.50	.60
24-26	.35	.40	.35	.40
20-22	.32½	.35	.32½	.35
Below 16	.30	.35	.30	.35
NORTH TEXAS—				
32-36 (G.O.) industrial	.00⅞	.01	.00⅞	.01
22-26	.35	.40	.35	.40
Below 20	.30	.35	.30	.35
†NORTH LOUISIANA—				
32-36 (G.O.) zero	.02½		.02½	
14-16	.30	.35	.30	.35
†ARKANSAS—				
30-32 (G.O.) zero	.02¼	.02½	.02¼	.02½
14-16	.30	.35	.30	.35
CHICAGO (Based on Oklahoma Group 3)—				
32-36 (G.O.) industrial	.01	.01⅛	.01	.01⅛
28-30 (zero)	.65	.70	.70	.75
26-28 (zero)	.55	.60	.60	.65
22-26 (zero)	.45	.50	.47½	.52½
18-22 (zero)	.40	.45	.42½	.45
Below 18	.35	.40	.37½	.40
PENNSYLVANIA (inland refineries)—				
36-40	.03¼	.03½	.03¼	.03½

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel less in all areas than shown in above tables.

†For Arkansas, Louisiana and Mississippi delivery.

CALIFORNIA—				
30-34 (G.O.) per bbl.	.90	.90	.80	.90
27 plus Diesel	.80	.90	.80	.90
15-19 bunker (at tidewater)	.50	.60	.50	.60
15-19 (cargo lots)	.45	.55	.45	.55
15-19 (tank cars)	.35	.50	.35	.50
GULF COAST—				
28-30 (G.O.)	.02¾	.03	.03	.03¼
28-30 Diesel	1.50		1.50	
Bunker C (bulk cargoes)	.57½	.60	.57½	.60
Bunker C (bunkers)	.70		.70	
NEW YORK (Bayonne, N. J.)—				
28 plus (G.O.)	.04		.04	
*28-30 Diesel	1.65		1.65	
26-30 Diesel (tank cars)	.04		.04	
‡Bunker C	.70	.75	.70	.75

*Lighterage 6½ cents per barrel.

†Lighterage 5 cents per barrel.

‡Contract price at New York harbor to ocean-going steamships only.

Petroleum Coke*

Prices per ton f.o.b. refineries in Chicago area.

Breeze (screenings)	4.50	4.50
Still runs	5.50	5.50
Lump and egg	6.50	6.50

*Refineries will absorb freight to 80 cents a ton.

Neutral Oils

(Viscosity at 100° F. and color)

	Apr. 18		Apr. 11	
OKLAHOMA (Group 3)—				
Zero to 10 Cold Test:				
150-3	.06¼	.06½	.06¼	.06½
180-3	.07½	.07⅝	.07¼	.07⅜
180-4	.07¼	.07½	.07	.07¼
200-3	.08	.08¼	.08	.08¼
200-4	.07¾	.08	.07¾	.08
240-3	.10	.10¼	.10	.10¼
240-4	.09¾	.10	.09¾	.10
280-3	.11	.11¼	.11	.11¼
280-4	.10½	.10¾	.10½	.10¾
300-3½	.11¼	.11½	.11⅜	.11½
350-3½	.11¾	.12	.11⅞	.12
400-4	.12¼	.12½	.12¼	.12½
500-4½	.12⅝	.13	.13	.13¼
100-2 paraffin oil	.04¼	.04½	.04¼	.04½
15-30 Cold Test:				
200-3	.07¼	.07½	.07¼	.07½
200-4	.07	.07¼	.07	.07¼
240-3	.09¼	.09½	.09¼	.09½
240-4	.09	.09¼	.09	.09¼
280-3	.10¼	.10½	.10¼	.10½
280-4	.10	.10¼	.10	.10¼
PENNSYLVANIA—				
150 vis., No. 3, 400-405:				
Zero pour test	.10¾	.11½	.10¼	.10¾
10 pour test	.10½	.11	.10½	.10¾
15 pour test	.08¾	.09	.08½	.09
25 pour test	.07¾	.08	.07¾	.08
180 vis., No. 3, 25 pour test	.10½	.11	.10½	.11
200 vis., No. 3:				
Zero pour test	.14¾	.15¼	.14¾	.15¼
10 pour test	.14	.14½	.14	.14½
15 pour test	.12¾	.13¼	.12¾	.13¼
25 pour test	.12¼	.12½	.12¼	.12½
GULF COAST—				
Pale Oils:				
100-2-2½	.05¼	.05½	.05¼	.05½
200-3	.06½		.06½	

300-3	.07¼	.07½	.07¼	.07½
500-3½	.09¼	.09½	.09¼	.09½
750-3½	.10¼	.10½	.10¼	.10½
1,200-3½	.12½		.12½	
2,000-4	.13½	.14	.13½	.14
Red Oils:				
200-5-6	.05¼	.05½	.05¼	.05½
300-5-6	.06½	.06¾	.06½	.06¾
500-5-6	.07½	.07¾	.07½	.07¾
1,200-5-6	.10½	.11	.10½	.11
2,000-6 plus	.12¼	.12½	.12¼	.12½
CALIFORNIA—				
Pale Oils:				
100-2½-3	.09	.10	.09	.10
200-2½-3	.10	.11	.10	.11
300-3-3½	.11	.11½	.11	.11½
350-3-4	.11½	.11¾	.11½	.11¾
400-3-4	.11¾	.12	.11¾	.12
450-3-4	.12	.12¼	.12	.12¼
550-3-4	.12¼	.12¾	.12¼	.12¾
Red Oils:				
200-4-5	.08¾	.09¾	.08¾	.09¾
300-5-6	.10	.10½	.10	.10½
350-5-6	.10½	.11	.10½	.11
400-5-6	.11	.11½	.11	.11½
450-5-6	.11½	.11¾	.11½	.11¾
500-5-6	.11¾	.12	.11¾	.12
600-5-6½	.12	.12¼	.12	.12¼
700-6½ plus	.12¼	.12½	.12¼	.12½
750-6½ plus	.12½	.12¾	.12½	.12¾
900-6½ plus	.13	.14½	.13	.14½

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	Apr. 18		Apr. 11	
630 light green	.05	.07	.06	.07
600 light green S.R.	.04	.05	.04	.05
600 dark green S.R.	.03	.04	.03	.04
Bright Stocks:				
190-200 D	.14	.15	.14	.15
150-160 D, 0-10	.12¼	.12¾	.12¼	.12½
150-160 D, 10-25	.11¾	.12	.11¾	.12
150-160 D, 25-40	.11¼		.11¼	
150-160 E	.11¼		.11¼	
PENNSYLVANIA—				
600 S. R.	.07¾	.08	.07¼	.07¾
650 S.R.	.10¼	.11	.10¼	.11
600 Pennsylvania flash	.11½	.12	.11½	.12
630 D filtered	.16½	.17¼	.16½	.17
600 E filtered	.12¼	.12½	.12	.12¼
Pennsylvania Grade bright stock:				
Bright Stock, No. 8 color, 145-50 vis.				
210-540-550 flash:				
10 pour test	.18	.19	.18	.18½
15 pour test	.15½	.16	.15½	.16
25 pour test	.15	.15½	.15	.15½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	Apr. 18		Apr. 11	
124-126 white crude scale	.01⅝	.01¾	.01⅝	.01¾
PENNSYLVANIA—				
122-124	.02		.02	
124-126	.02⅛	.02¼	.02⅛	.02¼
NEW YORK (Bayonne, N. J.)—				
120-122 (a.m.p. basis)	.02½		.02½	
125-127	.02¾		.02¾	
130-132	.03⅛		.03⅛	
133-135	.04		.04	
135-137	.04⅛		.04⅛	
CHICAGO (f.o.b. switching district)*—				
122-124	.0330	.0340	.0330	.0340
125-127	.0355	.0365	.0355	.0365
127-129	.0370	.0380	.0370	.0380
130-132	.0430	.0440	.0430	.0440
132-134	.0455	.0465	.0455	.0465

*Cents per pound on carlot orders in cotton lined burlap bags of 225 lbs. approx.
Add 3° F. for a.m.p.
NEW YORK—
Petrolatum in barrels in carload lots:

Dark green	.01⅞	.01⅞
Amber	.02	.02
Extra amber	.02⅜	.02⅜
Lily white	.05½	.05½
Snow white	.06½	.06½
Cream	.04½	.04½

Export Prices

GASOLINE

GULF COAST—	Apr. 18		Apr. 11	
U. S. Motor	.03¼	.03½	.03¼	.03½
60-62 400	.03⅝		.03⅝	
61-63 390	.03⅝		.03⅝	
64-66 375	.03⅞	.03¾	.03⅞	.03¾
LOS ANGELES, CALIF.—				
U. S. Motor, 53-55 437 e.p.	.03¾	.04¼	.03¾	.04¼
U. S. Motor, 65 octane	.04½	.04¾	.04½	.04¾
U. S. Motor, 67 octane	.05		.05	
U. S. Motor, 69 octane	.05¼		.05¼	
58-60 400 endpoint gasoline	.04¼	.05	.04¼	.05

KEROSENE

GULF COAST—				
41-43 prime white	.04		.04	
41 water white	.04⅛	.04¼	.04⅛	.04¼
LOS ANGELES, CALIF.—				
41-43 water white	.03¾	.04¼	.03¾	.04¼

LUBRICANTS

NEW YORK, (f.a.s. in bbls.)—		
600 Warren E	.17	.17½
600 S.R. unfiltered	.13	.13½
650 S.R. unfiltered	.15½	.16
600 flash S.R.	.16¼	.17
630 flash S.R.	.21	.22
Bright stock, No. 8 color	.22½	.22½
Bright stock, No. 6½ color		
dil.	.21½	.21½

NEUTRALS

NEW YORK—Pale Engine Oil, Bulk (vis. at 100)—		
230-3¾	.09¾	.09¾
180-3¼	.09½	.09½
100-2¼	.05	.05
Red Engine Oil, Bulk (vis. at 100):		
300-6½	.09½	.09½
250-6	.08½	.08½
200-6	.07¾	.07¾

Crude Oil Prices

Oklahoma, Kansas, North and East Central Texas

East Texas (see note) ..... $ .50
Corsicana, heavy (Jan. 20, 1933)* ..... .30
Other fields ..... See gravity table

East Texas posted by Tide Water Oil Co., January 18; Sinclair Prairie Oil Marketing Co., January 18; The Texas Company, January 20; Magnolia Petroleum Co., January 19; Shell Petroleum Corp., January 19; Panola Pipe Line Co., January 20; Humble Oil & Refining Co., January 20.
*Magnolia Petroleum Co.

West Texas

Iatan and Westbrook..Same as North Texas
Crane, Upton, Crockett, Howard, Glasscock, Mitchell, Ector, Winkler and Pecos Counties ..... See note below
Lea County, N. Mex. ..... See Rocky Mountain table
Toborg, Pecos County* ..... $ .40
Jones and Fisher Counties ..... See gravity table

Note—Crane, Upton, etc., effective January 19 by The Texas Company, 30 cents; followed by Humble Oil & Refining Co., Magnolia Petroleum Co., Gulf Pipe Line Co., on January 20, and by other purchasers.
*Shell Petroleum Corp., January 19, 1933.

Texas Panhandle

Gray County, Wheeler County and Carson-Hutchinson Counties ..... See gravity table

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers ..... See gravity table
Jennings, La. (Jan. 20, 1933)* ..... $ .35
Cameron Meadows, La. (Jan. 20, 1933)† ..... Below 20 gravity 22 cents, differential 2 cents per degree beginning with 21-21.9 at 26 cents with 40 gravity and over at 52 cents.
Refugio, light ..... See gravity table
Refugio, heavy (Jan. 20, 1933)‡ ..... .45
Markham‖..See Gulf Coast gravity schedule
High Island‡ ..... See Gulf Coast gravity schedule
Conroe ..... See note

*Gulf Refining Co. †Magnolia Petroleum Co. ‡Humble Oil & Refining Co. §The Texas Company. ‖Yount Lee Pipe Line Co.

Note—In the Conroe Field, effective January 19, Tide Water Oil Co. posted as follows: 35-35.9 degrees, 59 cents, with 1 cent added for each degree upward to 40 degrees and over, at 64 cents; January 20, Humble Oil & Refining Co. posted 35-35.9 degrees, 54 cents, with 2 cents added for each degree upward to 40 degrees and over at 64 cents. The Texas Company met Humble Oil & Refining Co. prices on March 6.

South Central and Southwest Texas

Darst Creek ..... See note below
Luling (Jan. 20, 1933) ..... $ .30
Miranda (Jan. 20, 1933) ..... .35
Pettus (Jan. 20, 1933) ..... .55
Salt Flat (Jan. 20, 1933) ..... .40
Lytton Springs (Jan. 20, 1933) ..... .45
Duval County (March 6, 1933) ..... .35
Saxet (March 6, 1933) ..... .45

Note—The Texas Company, January 19, followed by Humble Oil & Refining Co., Magnolia Petroleum Co. and Gulf Pipe Line Co., January 20. Magnolia Petroleum Co. in Luling; Magnolia, Humble and Gulf companies in Refugio crude; Humble and Gulf companies in Pettus; Humble and Gulf companies in Salt Flat; Magnolia Petroleum Co. in Lytton Springs. In Darst Creek, effective January 19, The Texas Company, 35 cents; effective January 20, Magnolia Petroleum Co., 35 cents; Humble Oil & Refining Co., 40 cents; Gulf Pipe Line Co., 40 cents. Duval and Saxet posted by The Texas Company.

North Louisiana and Arkansas

Smackover, Ark. (all grades) ..... See note below
Urania, La. (Jan. 20, 1933) ..... $ .25
East El Dorado, Ark. (Jan. 20, 1933). ..... See note below
Other fields ..... See gravity table

Note—Smackover, all grades, effective January 19 by The Texas Company, 30 cents; January 20, Standard Oil Co. of Louisiana, 20 cents, Magnolia Petroleum Co. 20 cents, Gulf Refining Co. 30 cents; Louisiana Oil Refining Corp., 25 cents. Urania Field posted by Louisiana Oil Refining Co. and H. L. Hunt, Inc., East El Dorado, effective January 20, Magnolia Petroleum Co. 20 cents, Gulf Refining Co. 30 cents.

Eastern States

JOSEPH SEEP PURCHASING AGENCY
(Effective January 21, 1933)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field) $1.47
Pennsylvania Grade Oil in Southwest Pennsylvania Lines 1.17
Penna Grade Oil in Eureka Pipe Line Lines 1.12
Penna Grade Oil in Buckeye Pipe Line Lines ..... .97
Corning Grade Oil in Buckeye Pipe Line Co.'s line (Jan. 20, 1933) ..... .70
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) (Jan. 19, 1931) ..... .60

PENNZOIL CO.
(Effective January 21, 1933)

Pennsylvania Grade Oil in National Transit Lines:
Group A $1.42
Includes Cochran, Franklin, Hamilton and Doolittle districts.
Group B 1.41
Includes Titusville district.
Group C 1.40
Includes Turkey and Tidioute districts.
Group D 1.39
Includes Bear Creek and Porkey districts.
Group E 1.37
Includes Eidenau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacy and Kinzua districts.
Price depends on length of pipe line haul to plant at Oil City.

TIDE WATER PIPE CO.
(Effective January 21, 1933)

Bradford, Pa. $1.47
Allegany, N. Y. 1.47

PURE OIL CO.
(Effective January 21, 1933)

Cabin Creek, W. Va. $1.12
Bradford Hollow, W. Va. 1.12
Kelly's Creek, W. Va. 1.12

Rocky Mountain States

OHIO OIL CO.-STANOLIND OIL & GAS CO.
Ilex, light (Jan. 18, 1933) ..... $ .40
Ilex, heavy (Jan. 18, 1933) ..... .34

(Continued on Page 31)

Crude Oil Gravity Table

Degrees of gravity—	1 Kansas, Oklahoma, North Texas, Central Texas, East Central Texas	2 North Louisiana and Arkansas	3 North Louisiana and Arkansas	4 Gray County, Texas	5 Carson, Hutchinson and Moore Counties, Texas	6 Gulf Coast, Texas and Louisiana	7 Gulf Coast, Texas and Louisiana	8 Salt Creek, Wyoming
Below 20	....	....	....	....	....	$.45	$.32	....
20-20.9	....	....	....	....	....	.45	.34	....
21-21.9	....	....	....	....	....	.45	.36	....
22-22.9	....	....	....	....	....	.46	.38	....
23-23.9	....	....	....	....	....	.47	.40	....
24-24.9	....	....	....	....	....	.48	.42	....
Below 25	....	....	....	....	....	....	....	....
25-25.9	....	....	....	....	....	.49	.44	....
26-26.9	....	....	....	....	....	.50	.46	....
27-27.9	....	....	....	....	....	.51	.48	....
28-28.9	....	....	....	....	....	.52	.50	....
Below 29	$.28	$.28	$.20	....	....	....	....	$.28
29-29.9	.30	.30	.22	....	....	.53	.52	.30
30-30.9	.32	.32	.24	....	....	.54	.54	.32
31-31.9	.34	.34	.26	....	....	.55	.56	.34
32-32.9	.36	.36	.28	....	....	.56	.58	.36
33-33.9	.38	.38	.30	....	....	.57	.60	.38
34-34.9	.40	.40	.32	....	....	.58	.62	.40
35-35.9	.42	.42	.34	$.30	$.20	.59	.62	.42
36-36.9	.44	.44	.36	.32	.22	.60	.62	.44
37-37.9	.46	.46	.38	.34	.24	.61	.62	.46
38-38.9	.48	.48	.40	.36	.26	.62	.62	.48
39-39.9	.50	.50	.42	.38	.28	.63	.62	.50
40 and over	.52	.52	.44	.40	.30	.64	.62	.52

Note—Effective January 20, the Standard Oil Co. of Louisiana posted the following prices in North Louisiana and Arkansas: Caddo, below 29 gravity, 20 cents; 40 gravity and above, 44 cents. Sabine and De Soto, below 29 gravity, 25 cents; 40 gravity and above, 49 cents. Homer, below 29 gravity, 23 cents; 40 gravity and above, 53 cents. Sarepta and Cartersville, below 29 gravity, 17 cents; 40 gravity and above, 41 cents. El Dorado, below 29 gravity, 25 cents; 40 gravity and above, 49 cents. Haynesville, below 29 gravity, 19 cents; 40 gravity and above, 43 cents. The above all carry 2 cents differential for each degree in gravity. Smackover, all grades, 20 cents.

Column 1—Effective January 18, Stanolind Crude Oil Purchasing Co., Sinclair Prairie Oil Marketing Co.; January 19, The Texas Company; January 20, Magnolia Petroleum Co. (starting at below 25 degrees, 20 cents, with 2 cents added for each degree upward); January 20, Carter Oil Co. in Oklahoma and Kansas and Humble Oil & Refining Co. in North Central and East Central Texas; January 20, Gypsy Oil Co. in Oklahoma and Kansas and Gulf Production Co. in North, Central and East Central Texas; January 18, Globe Oil & Refining Co. and Tide Water Oil Co. in Kansas and Oklahoma; January 19, Empire Pipe Line Co., Shell Petroleum Corp.; January 18, in Oklahoma, Deep Rock Oil & Refining Co., Barnsdall Refineries, Inc., Continental Oil Co., Bell Oil & Gas Co., Tide Water Oil Co., Champlin Refining Co., Anderson-Prichard Corp., Cushing Refining Co., Eason Oil Co., Johnson Oil Refining Co., Mid-Continent Petroleum Corp., Pepper Gasoline Co., Sunray Oil Co., Yale Oil Corp., Twin State Oil Co., Rock Island Refining Co.; January 20, Phillex Oil Co. and Pure Oil Co.; Oklahoma and North Texas, January 18, Continental Oil Co.; Kansas, January 18, Eldorado Refining Co., Vickers Petroleum Co., Skelly Oil Co. (starting below 25 degrees, 20 cents, with 2 cents added for each degree upward); January 19, White Eagle Oil Corp. Effective April 1, Derby Oil & Refining Co.

Column 2—The Texas Company, January 19; Louisiana Oil Refining Co., January 20; Gulf Refining Co., January 20 (starting at below 25 degrees, 20 cents, with 2 cents added for each degree upward). For Standard Oil Co. of Louisiana schedule see note below price table.

Column 3—Magnolia Petroleum Co., January 20.

Column 4—Effective February 28, 1933, Humble Oil & Refining Co. Effective January 20, Phil Tex Oil Co. Effective March 6, The Texas Company. March 7, Magnolia Petroleum Co.

Column 5—Effective February 28, 1933, Humble Oil & Refining Co. Effective January 20, Phil Tex Oil Co. Effective February 28, Continental Oil Co. Effective March 6, The Texas Company. March 7 by Magnolia Petroleum Co.

Column 6—Effective March 6, 1933, The Texas Company.

Column 7—The Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Sun Oil Co., January 20.

Column 8—Stanolind Oil & Gas Co., January 18.

(California Crude Oil Prices on Page 31)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

April 18, 1933

Taxes

The gasoline quotations given in the following tables include the 1-cent Federal tax as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third or competitive grade is generally available at 1.5 or more cents per gallon under the service station price for the regular grade. Ethyl Gasolines are sold 3 cents above the service station price for the regular grade.

Southern District

STANDARD OIL CO (KENTUCKY)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Atlanta, Ga.	19.0	19.0	7.0	11.0
Augusta	20.0	20.0	7.0	11.0
Macon	20.0	20.0	7.0	10.0
Savannah	20.0	20.0	7.0	14.0
Birm'ham, Ala.	21.0	21.0	8.0	13.0
Mobile	19.0	19.0	8.0	8.0
Montgomery	22.0	22.0	8.0	14.0
Jackson, Miss.	16.0	16.0	7.0	13.0
Vicksburg	18.0	18.0	7.0	12.0
Jack'ville, Fla.	19.0	19.0	8.0	9.5
Miami	21.0	21.0	8.0	13.5
Pensacola	20.0	20.0	8.0	14.0
Tampa	19.0	19.0	8.0	12.0
Lexington, Ky.	18.5	18.5	8.0	10.0
Covington	18.0	18.0	6.0	11.5
Louisville	18.0	18.0	6.0	10.0
Paducah	19.0	19.0	6.0	9.0

A third grade "Kyso Green" is sold at a price generally 2 cents below the price on the regular grade.

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 2-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline. To Pensacola, Montgomery and Birmingham state taxes add 1-cent tax. To Mobile state tax add 1-cent city tax. Dealers receive discount of 3 cents off tank wagon price throughout territory.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Dallas, Tex.	12.5	15.0	5.0	7.0
Fort Worth	12.5	15.0	5.0	7.0
Houston	13.5	15.5	5.0	8.0
San Antonio	13.5	15.0	5.0	8.0
El Paso	13.5	15.0	5.0	8.0
Texarkana	*14.0	14.5	5.0	†11.0
Muskogee, Okla.	9.5	17.0	5.0	6.0
Okla. City	11.5	14.0	5.0	8.0
Tulsa	12.5	15.0	5.0	8.0
Ft. Smith, Ark.	*12.5	13.5	5.0	†10.0
Little Rock	14.5	14.5	7.0	†10.0

*Less 2½ cents to dealers. †Less 2 cents to dealers.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Chicago	14.1	14.1	4.0	8.0
Decatur, Ill.	15.6	15.6	4.0	10.1
E. St. Louis	14.9	13.9	4.0	9.3
Joliet	15.6	14.6	4.0	8.6
Peoria	15.6	15.6	4.0	10.1
Quincy	15.4	14.4	4.0	7.8
Davenport, Ia.	15.7	15.7	4.0	10.4
Des Moines	15.7	15.7	4.0	8.0
Mason City	15.7	15.7	4.0	9.0
Sioux City	15.3	15.3	4.0	10.0
Duluth, Minn.	16.7	16.7	4.0	11.0
Mankato	16.3	16.3	4.0	8.1
Minneapolis	14.4	14.4	4.0	11.0
LaCrosse, Wis.	17.4	17.4	5.0	11.3
Green Bay	16.5	16.5	5.0	10.5
Milwaukee	16.3	16.3	5.0	10.0
Madison	16.5	16.5	5.0	10.2
Detroit, Mich.	15.0	15.0	4.0	8.0
Grand Rapids	15.5	15.5	4.0	8.0
Saginaw	15.5	15.5	4.0	10.0
Evansville, Ind.	16.3	13.0	8.0	†13.9
Indianapolis	16.4	16.4	8.0	†14.3
South Bend	16.7	16.7	8.0	†14.4
Fargo, N. D.	18.1	18.1	4.0	12.0
Huron, S. D.	17.5	17.5	5.0	10.0
Sioux Falls	17.0	17.0	5.0	10.0
K. C., Mo.	14.1	14.1	4.0	7.0
Springfield	15.0	15.0	4.0	8.0
St. Louis	13.0	11.5	3.5	9.4
St. Joseph	13.0	10.9	4.0	7.5
Wichita, Kans.	13.9	13.9	4.0	7.0
Bartlesville, Ok.	12.5	16.0	5.0	9.0

*State tax 3 cents, 1-cent city tax and 1-cent Federal tax.

†Includes 4-cent tax. Buyers of kerosene not used as motor fuel can secure refund of tax.

Effective November 4, 1932—New dump discount applicable on all grades of gasoline sold from tank wagon. Any tank wagon customer buying 25 gallons or more at one time will be given 1-cent discount per gallon off tank wagon price at time of delivery. Customers not under contract receive no other discount.

Effective January 1, 1933—Discounts on Q.D.A. on 500 gallons or more per month throughout territory; Red Crown Ethyl Gasoline, 3 cents off tank wagon price; Red Crown gasoline, 2½ cents off tank wagon price; Stanolind Blue gasoline, 1 cent off tank wagon price. On deliveries of 75,000 gallons or more each classification allowed 1 cent additional discount.

Discounts on resellers authorized agent's agreement: Same amounts as above except made off service station price instead of tank wagon price.

Stanolind Furnace Oil in Chicago

Effective November 1, 1932, prices f.o.b. Chicago, tank wagon prices: No. 1 (36-40 lt. stw. sero), 100 gallons or more, 7 cents; No. 2 (30-34 stw. sero), 150 gallons or more, 6¼ cents; No. 3 (32-36 sero), 400 gallons or more 5.75 cents; No. 4 (13-16 sero), 400 gallons or more, 4.75 cents. Viscosity of No. 4, 90-115 at 100° F.

Fuel Oils

Associated Distributors Prices

Spot market prices on 250 gallons or over deliveries, and top prices on contracts, respectively: 28-40, 7 and 8 cents; 32-36 light, 6¾ and 7¾ cents; 32-36 dark, 6¼ and 7¼ cents; 28-30, 5¾ and 6¾ cents; 24-6, 4¾ and 5¾ cents; 18-22, 4¼ and 5¼ cents. On deliveries of less than 250 gallons the spot price is one-half cent higher.

Naphtha

	Tank Wagon	Car
Oleum spirits	10.7	8.32
V.M.&P. naphtha	12.7	7.32
Cleaners' naphtha	13.0	9.32
Stanisol	15.2	9.32

Tank wagon prices f.o.b. Chicago, January 6, 1932. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Denver, Colo.	14.0	17.0	5.0	12.5
Pueblo	14.0	17.0	5.0	12.5
Grand Junct'n.	18.0	21.0	5.0	14.5
Casper, Wyo.	16.0	19.0	5.0	10.0
Cheyenne	14.0	17.0	5.0	11.5
Butte, Mont.	16.0	19.0	6.0	17.0
Billings	21.0	24.0	6.0	15.5
Great Falls	21.0	22.0	6.0	17.0
Helena	21.0	24.0	6.0	17.0
Salt Lake, Utah	16.0	19.0	5.0	16.0
Alba'que, N. M.	14.0	17.0	*7.0	12.0
Boise, Idaho	18.5	21.5	6.0	18.0
Twin Falls	20.5	23.5	6.0	18.0

*One-cent city tax.

Central South District

STANDARD OIL CO. (LOUISIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
N. Orleans, La.	15.5	15.5	*7.0	†11.0
Baton Rouge	15.0	15.0	6.0	†10.0
Alexandria	14.0	14.0	7.0	†8.5
Lafayette	15.0	15.0	7.0	†10.0
Lake Charles	15.0	15.0	7.0	†10.0
Shreveport	14.0	14.0	6.0	†11.0
Knoxville, Tenn.	19.5	19.5	8.0	12.5
Memphis	18.0	18.0	8.0	10.0
Chattanooga	19.0	19.0	8.0	12.0
Nashville	19.0	19.0	8.0	10.0
Bristol	18.0	18.0	8.0	13.0
Lt. Rock, Ark.	15.5	15.5	8.0	10.0

*Includes city tax of 1 cent. †Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

Two-cent discount off kerosene tank wagon price and 2½ cents off gasoline tank wagon price to dealer and commercial accounts.

Nebraska

STANDARD OIL CO. (NEBRASKA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Omaha	16.3	17.3	5.0	9.0
McCook	17.0	17.0	5.0	9.5
Norfolk	16.8	17.8	5.0	10.75
N. Platte	17.0	17.0	5.0	9.0
Scottsbluff	17.0	17.0	5.0	9.5

Note — Dealers' discount allowed as follows: Red Crown Ethyl, 3 cents off station price; Red Crown, 2½ cents off normal service station price; Nebraska Blue (third grade), 1 cent off normal service station price.

Ohio

STANDARD OIL CO. (OHIO)*

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Ohio points	15.5	†16.0	5.0	‡12.0

*Two cents off on gasoline tank wagon to dealers and commercial accounts; 2½ cents off tank wagon and kerosene to dealers.

†One-cent discount for cash sales.

New York and Part of New England District

STANDARD OIL CO. (NEW YORK)*

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Albany, N. Y.	14.0	15.0	4.0	9.0
New York	13.5	13.5	4.0	8.0
Buffalo	13.5	14.5	4.0	9.0
Rochester	14.5	15.5	4.0	9.0
Syracuse	15.0	16.0	4.0	9.5
Boston, Mass.	15.0	15.0	4.0	8.0
Augusta, Me.	18.0	19.0	5.0	9.0
Manch'tr, N. H.	17.5	18.5	5.0	8.0
Burlington, Vt.	18.0	19.0	5.0	8.5

*Discount schedule to commercial accounts are as follows: At service stations, 1 cent per gallon; tank wagon deliveries up to 20,000 gallons monthly, 2 cents per gallon; 20,000 to 100,000 gallons, 2½ cents; 100,000 to 300,000 gallons, 3 cents; 300,000 gallons and up, 3½ cents.

Atlantic Coast District

STANDARD OIL CO. (NEW JERSEY)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Atl'tic. City, N.J.	14.0	15.0	4.0	11.3
Newark	12.9	12.9	4.0	8.5
Annapolis, Md.	14.6	14.6	5.0	9.0
Baltimore	14.0	15.0	5.0	8.0
Cumberland	15.5	16.5	5.0	11.7
Wash'g'n, D. C.	12.3	13.3	3.0	10.0
Danville, Va.	16.7	17.7	6.0	10.9
Norfolk	15.1	16.1	6.0	10.3
Petersburg	16.2	17.2	6.0	11.4
Richmond	15.5	16.5	6.0	10.7
Roanoke	16.7	17.7	6.0	11.0
Charle's'n, W. Va.	15.4	16.4	5.0	11.6
Parkersburg	14.0	15.0	5.0	10.3
Wheeling	15.0	16.0	5.0	11.3
Charlotte, N. C.	17.3	18.3	7.0	13.5
Hickory	16.5	17.5	7.0	12.7
Mt. Airy	18.4	19.4	7.0	13.8
Raleigh	18.1	19.1	7.0	13.3
Salisbury	18.0	19.0	7.0	13.6
Charleston, S.C.	16.1	17.1	7.0	10.3
Columbia	18.0	19.0	7.0	12.2
Spartanburg	16.0	16.0	7.0	12.5

Two cents per gallon discount off tank wagon price of gasoline to dealers except Washington, D. C., and Baltimore, Md., where discount is 3 cents. Kerosene 1 cent off tank wagon for 25 gallons or more under contract except New Jersey.

Canada

IMPERIAL OIL, LTD.

Imperial 3-Star Gasoline

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Hamilton, Ont.	22.5	25.5	6.0	15.5
Toronto, Ont.	22.5	25.5	6.0	15.5
Brandon, Man.	29.0	33.5	7.0	17.5
Winnipeg, Man.	28.0	29.5	7.0	17.5
Regina, Sask.	29.0	33.0	6.0	21.5
Saskatoon, Sask.	31.0	35.0	6.0	23.5
Edmonton, Alta.	29.5	33.5	6.0	22.5
Calgary, Alta.	26.0	30.0	6.0	19.0
Vancouver, B.C.	26.5	29.5	7.0	22.5
Montreal, Que.	22.0	25.0	6.0	15.0
St. Johns, N.B.	24.5	28.5	7.5	20.5
Halifax, N.S.	23.5	27.5	6.0	20.5

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

	Gasoline			Kero.
	Tank truck†	Posted retail	Incl'ds tax	tank wagon
Fresno	13.9	17.0	4.0	14.0
San Francisco	13.0	17.0	4.0	12.5
Los Angeles	16.5	15.5	4.0	12.5
Reno, Nev.	21.5	20.5	5.0	15.5
Portland, Ore.	17.0	16.0	5.0	13.5
Seattle, Wash.	18.0	17.0	6.0	13.5
Tacoma	18.0	17.0	6.0	13.5
Spokane	20.5	19.5	6.0	15.0
Phoenix, Ariz.	18.0	20.0	6.0	†16.0

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Above prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent. ‡Includes 5-cent state tax.

Pennsylvania-Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Pittsburgh, Pa.	13.5	14.5	4.0	9.5
Philadelphia	13.5	14.0	4.0	9.0
Scranton	13.5	14.5	4.0	9.0
Allentown	13.5	14.5	4.0	9.0
Altoona	13.5	14.5	4.0	9.5
Erie	13.5	14.5	4.0	9.5
Dover, Del.	13.5	14.5	4.0	9.0
Wilmington	13.5	14.5	4.0	9.0
Springf'd, Mass.	16.5	17.5	4.0	8.0
Worcester	15.5	16.5	4.0	8.0
Boston	15.0	16.0	4.0	8.0
Providence, R.I.	14.5	15.5	3.0	8.0
Hartford, Conn.	15.0	16.0	3.0	8.0
New Haven	15.0	16.0	3.0	8.0

Discount schedule effective November 1, 1932. In Delaware and Pennsylvania, 2 cents off station price on purchases of 2,000 gallons or more per month, in remainder of territory 1 cent. Wholesale discount 2½ cents per gallon on monthly deliveries of 20,000 to 100,000 gallons, 3 cents on 100,000 to 300,000 gallons, and 3½ cents on more than 300,000 gallons.

TANK WAGON CHANGES

(Regular Grade Gasoline and Kerosene)

Standard Oil Co. of Kentucky, effective April 8, reduced gasoline tank wagon and service station prices 1 cent at Atlantic, Ga.; effective April 6, reduced gasoline tank wagon and service station prices 1 cent at Tampa, Fla.; effective April 5, advanced kerosene tank wagon price from 12½ to 14 cents at Savannah, Ga.

Atlantic Refining Co., effective April 5, advanced gasoline tank wagon and service station prices 1 cent at Boston, Worcester and Springfield, Mass., and 1 cent at New Haven, Conn.; effective April 6, advanced gasoline tank wagon and service station prices 1 cent at Fall River, Mass., and Hartford and Providence, R. I.

CRUDE OIL PRICE CHANGES

The Panhandle Refining Co., Wichita Falls, Tex., effective April 15 posted 35 cents per barrel for 36 gravity and below, with 1 cent added for each degree up to and including 40 degrees and over at 40 cents. This meets the price being paid by other refiners in that district.

The Derby Oil & Refining Co. retroactive to April 1 posted the regular Mid-Continent price scale in Kansas with 52 cents as the top for crude 40 degrees and over. It has been paying a premium posted price for high gravity crudes.

Consumption of Kerosene Increases in Minnesota

Of the various states reporting the sale of kerosene as the result of inspection laws, Minnesota showed a large increase in 1932 over that of the previous year. This was contrary to the reports received from a majority of the states, however.

In 1932 Minnesota reports sales totaling 101,145,000 gallons while in 1931 the reported volume was 78,932,000 gallons. North Dakota also showed an increase amounting to from 8,661,000 gallons in 1931 to 12,312,000 gallons in the previous year. In the balance of the states reporting the volume sold in 1932 was under that sold in the previous year. The following table shows the respective sales.

State reporting—	Sales of gasoline— 1932	1931
Alabama	12,582,000	13,375,000
Arkansas	14,319,000	14,059,000
Colorado	5,413,000	6,472,000
Florida	24,422,000	24,154,000
Georgia	18,392,000	19,288,000
Kansas	34,636,000	41,070,000
Michigan	33,868,000	35,358,000
Minnesota	101,145,000	78,932,000
Missouri	48,149,000	53,718,000
Nebraska	37,584,000	46,481,000
North Dakota	12,312,000	8,661,000
Oklahoma	28,479,000	29,762,000
South Dakota	9,722,000	10,316,000
South Carolina	11,949,000	14,456,000

AUSTRALIAN OIL FIELD

A recent survey of the vicinity of Lakes Entrance, Victoria, Australia, brought the report that the field could be made to yield about 1,115,000 bbls. a year.

NEWS FOR SALES DEPARTMENTS

Motor Fuel Consumption Decreases 1.4 Per Cent

Gasoline consumption in January was practically the same as a year ago. Estimates of consumption prepared by the American Petroleum Institute from state inspection reports indicate a decrease for the country of only 1.4 per cent. This represents a reduction of 15,410,000 gallons, which is relatively small when considering the fact that the number of cars registered throughout the United States on January 1 was decidedly below the number a year ago. The detailed report of the consumption by states appears below.

The loss in gallonage was most pronounced among the agricultural states, and contrasting with that situation is the marked increase reported in New York, where consumption increased from 105,664,000 gallons in January a year ago to 133,038,000 gallons this January. While this increase is encouraging, it is quite possible that a part of the difference is due to an improvement in the methods of collecting the tax.

GASOLINE CONSUMPTION BY STATES, JANUARY, 1933

	January, (gallons) 1933	January, (gallons) 1932
Alabama	9,600,000	11,232,000
Arizona	4,851,000	5,509,000
Arkansas	9,188,000	11,319,000
California	90,885,000	102,210,000
Colorado	11,192,000	10,910,000
Connecticut	14,882,000	15,849,000
Delaware	1,910,000	2,851,000
District of Columbia	7,907,000	7,318,000
Florida	19,567,000	20,697,000
Georgia	15,639,000	16,726,000
Idaho	2,272,000	2,619,000
Illinois	65,032,000	69,091,000
Indiana	30,797,000	32,648,000
Iowa	25,828,000	24,227,000
Kansas	23,828,000	22,399,000
Kentucky	11,385,000	13,075,000
Louisiana	13,014,000	13,542,000
Maine	5,397,000	5,381,000
Maryland	12,795,000	13,557,000
Massachusetts	33,343,000	36,132,000
Michigan	49,572,000	56,036,000
Minnesota	24,914,000	26,031,000
Mississippi	7,662,000	8,291,000
Missouri	35,412,000	34,608,000
Montana	3,429,000	3,336,000
Nebraska	13,337,000	12,932,000
Nevada	1,195,000	1,425,000
New Hampshire	3,321,000	3,588,000
New Jersey	44,736,000	47,799,000
New Mexico	3,133,000	3,161,000
New York	133,038,000	105,664,000
North Carolina	17,556,000	20,542,000
North Dakota	4,057,000	3,732,000
Ohio	67,234,000	64,476,000
Oklahoma	21,793,000	21,287,000
Oregon	9,838,000	10,412,000
Pennsylvania	68,288,000	71,689,000
Rhode Island	6,790,000	7,044,000
South Carolina	8,338,000	8,282,000
South Dakota	7,071,000	6,823,000
Tennessee	13,727,000	15,236,000
Texas	56,302,000	55,462,000
Utah	3,381,000	3,397,000
Vermont	1,917,000	2,215,000
Virginia	16,860,000	16,464,000
Washington	15,362,000	15,289,000
West Virginia	7,719,000	8,298,000
Wisconsin	23,916,000	26,119,000
Wyoming	1,966,000	1,792,000
Total	1,081,257,000	1,096,667,000
Daily average	34,879,000	35,376,000
Change from previous year:		
Total decrease	15,410,000	
% decrease in daily average	—1.40	

DISCRIMINATION LAW DROPPED

CHATHAM, Ontario, Apr. 15.—To speed the adjournment of the Saskatchewan legislature, the provincial government dropped its proposed legislation to prevent discrimination in gasoline prices. The bill required that any price cut made in one locality must become general throughout the province, with drastic penalties for violation. The Imperial Oil, Ltd., contemplated shutting down its Regina refinery if the measure was put into effect.

Sales of Gasoline in Illinois, Kansas and Texas Show Sharp Falling Off in 1932

Records of gasoline sales for 1932 in Illinois, Texas and Kansas, now available, continue the story of diminished business as compared with 1931 told by the figures for other states previously published on this page.

In Illinois the gasoline consumption in 1932 was 950,822,000 gallons, as against 1,047,687,000 gallons in 1931, a shrinkage in sales of 97,865,000 gallons, or 9.2 per cent. Texas experienced about the same percentage of decrease in gasoline sales. In that State 749,050,000 gallons sold in 1932 compare with 826,107,000 gallons in 1931, a drop of 77,050,000 gallons, or 9.3 per cent.

A sharper percentage of decline was seen in Kansas, where 335,251,000 gallons sold in 1932 contrasts with 388,384,000 gallons sold in 1931. This is a falling off of 53,133,000 gallons, or 13.7 per cent.

By reason of the fact that the Standard Oil Co. (Indiana), with marketing facilities penetrating virtually every corner of Illinois, sold more than twice as much gasoline in that State as any other one company, it suffered at the same time the heaviest loss in point of number of gallons sold, though it fared relatively well in the per cent of business lost. In 1932 the Standard of Indiana sold 259,757,508 gallons as compared with 285,969,507 gallons in 1931, a decrease of 26,211,999 gallons. This, however, is a loss of only 9.16 per cent of the 1931 business. The greatest percentage of loss in Illinois was suffered by the Indian Refining Co., which sold 5,031,854 gallons in 1932, as compared with 10,966,503 gallons in 1931, a decline of 5,934,649 gallons, or 54.12 per cent. The Phillips Petroleum Co., Cities Service Oil Co. and Continental Oil Co. showed increases.

The Gulf Refining Co.'s sales fell off 29,693,070 gallons in 1932 in Texas, its gallonage having been 118,132,064 in 1932 as compared with 147,825,134 in 1931. The Phillips Petroleum Co. showed a gain.

In Kansas the heaviest decrease in gallonage was suffered by the Continental Oil Co., which sold 15,401,350 gallons in that State in 1932, as contrasted with 26,945,400 gallons in 1931, a shrinkage of 11,544,050. Here also Phillips showed a gain, as did The Texas Company.

In the accompanying tables the gasoline sales of the first 15 companies, in point of volume sold, in Illinois, Texas and Kansas are given for 1932 and 1931, with the attendant decrease or increase. The figures are based on the tax records of the three states. In each of the tables the millions and thousands only are recorded, the hundreds being omitted.

	1932	1931	Dec. 1932
ILLINOIS			
Standard Oil (Ind.)	259,757	285,969	26,212
Sinclair Ref. Co.	110,703	113,472	2,769
The Texas Co.	92,769	101,078	8,309
Shell Pet. Corp.	73,274	93,550	20,276
Phillips Pet. Co.	64,614	53,881	*10,733
Cities Service Oil	12,336	10,794	*1,432
Deep Rock Oil†	11,483	13,679	2,196
Mid-Continent Pet.	9,527	10,136	609
Indian Ref. Co.	5,031	10,966	5,935
National Ref. Co.	6,503	6,199	304
Continental Oil Co.	5,114	4,238	*876
Pure Oil Co.	3,757	383	3,374
Lincoln Oil Ref.	4,271	3,110	1,161
Lubrite Ref. Co.	2,304	2,350	46
Barnsdall Ref. Co.‡	582	600	18
TEXAS			
The Texas Co.	132,212	152,669	20,457
Gulf Ref. Co.	118,132	147,825	29,693
Magnolia Pet. Co.	104,818	128,509	23,691
Humble O. & R. Co.	44,285	58,256	13,971
Sinclair Ref. Co.	46,000	34,184	11,816
Continental Oil Co.	27,000	31,977	4,977
Phillips Pet. and Standish Oil	18,125	15,288	*2,837
Simms Oil Co.	16,254	20,155	3,901
Marathon Oil Co.	14,782	19,970	5,188
Texas Pac. C. & O.	13,154	16,578	3,424
Cities Service and Empire O. & R.	13,114	19,893	6,779
Pasotex Pet. Co.	10,763	11,195	432
Panhandle Ref. Co.	7,329	7,429	200
American Ref. Properties, Wichita Falls	273	5,138	4,860
Grayburg Oil Co.	3,924	4,709	785
KANSAS			
Standard Oil (Ind.)	57,274	66,680	9,406
Skelly Oil Co.	31,817	41,646	9,829
White Eagle Oil	30,105	37,991	7,886
Phillips Pet. Co.	26,863	26,291	*572
Derby Oil Co.	26,641	33,097	6,456
Sinclair Ref. Co.	26,513	33,354	6,842
Shell Pet. Corp.	20,121	27,183	7,062
Continental Oil Co.	15,401	26,945	11,544
Eldorado Ref. Co.	15,043	15,425	382
Vickers Pet. Co.	12,535	14,083	1,548
Kanotex Ref. Co.	12,183	19,352	7,169
The Texas Co.	10,587	8,312	*2,275
Barnsdall Ref. Co.	8,551	11,504	2,953
Cities Service Oil	7,910	11,319	3,409
Mid-Continent Pet.	6,515	11,444	4,929

*Increase. †Incomplete figures for 1931 and 1932. Some suppliers pay inspection fee for material shipped their account. ‡Company does not operate bulk plants in Illinois.

Sales of Lubricating Oil Rise With Use of New Can

CHICAGO, Apr. 15.—The Valvoline Oil Co. has introduced the "tamper-proof" can merchandising plan for its lubricating oil at the 4,500 retail outlets of the company in the Chicago district. Officials of the company in Chicago report that the sale of its different grades of lubricating oil in sealed cans of 1 to 5-quart sizes has increased sales 100 per cent over the country.

"Our first order for cans," an official said, "was for 250,000 of the containers. We have had to repeat this order three times and find that we are about 20 days behind in our deliveries to jobbers. The canned lubricating oil was to have made its appearance in Milwaukee two weeks ago, but the cars of material are just now on their way to that city." Valvoline was to begin sale of the sealed lubricating oil in Milwaukee this week.

The Sinclair Refining Co., which introduced the tamper-proof lubricating oil can in the territory several weeks ago (in Milwaukee, Indianapolis and Alton, Ill.), is expected to introduce the plan in the Chicago district by May 1. Jobbers says that meetings have been held at which the sealed can proposition obtained ready acceptance. These jobbers say that nothing can stop the movement against lubricating oil bootlegging and substitution.

REPLACE PRESENT ISO-VIS

CHICAGO, Apr. 17.—Standard Oil Co. (Indiana) has set April 24, as the date for introducing its Iso-Vis D lubricating oil to replace the present Iso-Vis. Principal characteristics claimed for this new oil are exceedingly high resistance to oxidation and freedom from sludging. The price will be the same.

The viscosity index of Iso-Vis D is 85, considerably higher than for the older Iso-Vis. This increase is attributed to use of the dichlorethyl ether extraction process in production. Acid treating used in conjunction with the extraction method is extended and is responsible for the improved color and lower carbon deposition.

Increased Consumption of Gasoline in Canada Shown

CHATHAM, Ontario, Apr. 15.—Official figures of Canadian gasoline sales for January, compiled by the transportation branch of the Dominion Bureau of Statistics from returns of the provincial gasoline tax departments, indicate an upturn in gasoline consumption compared with the same month last year. The total for all Canada of 27,712,000 gallons compares with 25,354,000 gallons in January, 1932. Detailed comparative figures for the various provinces follow:

	January, 1932	January, 1933
Prince Edward Island	36,000	34,000
Nova Scotia	845,000	839,000
New Brunswick	405,000	503,000
Quebec	4,542,000	4,505,000
Ontario	13,864,000	15,830,000
Manitoba	1,360,000	861,000
Saskatchewan	1,088,000	944,000
Alberta	1,801,000	1,887,000
British Columbia	2,513,000	2,259,000

December, 1932, sales totaled 29,674,000 gallons for all Canada. The total for 1932 of 503,443,000 gallons compared with 554,989,000 gallons in 1931.

NOW AN OCTANE BUILDING

LOS ANGELES, Calif., Apr. 15.—The Octane Petroleum Corp. has purchased a $1,000,000 uptown office building. It was formerly known as the Fine Arts Building and later renamed the Signal Oil Building when the Signal Oil Co. obtained a long lease on part of the office space.

The Octane corporation represents the oil interests of Dwight and Milton Vedder of the Vedder Petroleum Co., and Russell E. Havenstrite and William Ahrens of the California Western Oil Co. The new owners will move their offices to the building in the near future.

SUE MIDLAND REFINING CO.

LOS ANGELES, Calif., Apr. 15.—In a suit filed in the U. S. District Court by Assistant United States Attorney Sharpless Walker, the Government is seeking to recover $88,701.34 from W. G. Phillips of Hanover, doing business as the Midland Refining Co. at Fellows, and from his surety company, the American Surety Co. of New York.

The basis of the Government's suit is a contract under which the Government agreed to sell to the plaintiff and his refining company crude oil from a well in the Kettleman Hills district, the oil land being the Naval Reserve Field.

OIL RATE HEARING APRIL 24

WICHITA FALLS, Tex., Apr. 15.—Hearing on the complaint of the Wichita Falls Petroleum Association attacking rail rates on petroleum and petroleum products out of Wichita Falls to states east of the Mississippi and the Illinois-Indiana State line, has been set in Washington for April 24. The Chamber of Commerce is joining the petroleum association in making the complaint. Under the present rate structure it is impossible for local refiners to market their products east of the Mississippi River, traffic managers said.

ARROW OIL TO SELL TIRES

The Arrow Oil Co., Michigan distributor for the Sun Oil Co., has announced that hereafter the company will sell Kelly-Springfield tires at its service stations.

Col. Donovan Outlines Appalachian Decision

(Continued from Page 8)

tion in favor of corporate combinations, the Supreme Court stated:

"We agree that there is no ground for holding defendants' plan illegal merely because they have not integrated their properties and have chosen to maintain their independent plants, seeking not to limit but rather to facilitate production. We know of no public policy, and none is suggested by the terms of the Sherman Act, that in order to comply with the law those engaged in industry should be driven to unify their properties and businesses in order to correct abuses which may be corrected by less drastic measures."

As to Oil and Gas

The possible application of this decision to the oil and gas industry can be indicated only in the most general terms. Certainly the opinion will lend courage to those who believe that industry should be encouraged in its efforts to correct abuses within it. There is no longer ground for the fear that an honest effort to remove abuses will be arbitrarily condemned.

Whether common selling agencies have any place in the oil and gas industry could only be determined after a detailed study of the industry's needs, and of the probable effect of such agencies on competitive conditions in the markets in which the agencies would operate. For example, it might appear that under certain circumstances and in certain markets, the use of commonly controlled service stations would be in the interest both of the oil companies and of the public in that they would promote the economical marketing of the product and thereby curb the overbuilding of retail outlets and at the same time preserve an active competitive condition. On the other hand, any attempt to apply this principle to all companies in the industry would be short sighted indeed. Clearly any combination which has the power to dominate a competitive market is illegal whether in the form of a common selling agency or a corporate combination. It is for this reason that the selling agency is peculiarly fitted to meet the needs of the relatively small units in an industry. It is a convenient and economical form of marketing machinery for placing a number of small units on a more nearly equal competitive footing with the larger units. Its application to the oil and gas industries would necessarily require a careful study of competitive conditions in the markets to be served.

"Q" Brand of Ethyl to be Offered June 1

(Continued from Page 11)

through the purchase of "Q" compound. The reason for limiting reforming is the high percentage lost as permanent gases, the high rate of depreciation on the equipment and the desire not to spend money for a separate unit. Many feel they might better spend this money on a combination unit a little later when it is hoped that the entire distillation equipment may be replaced. They realize that much of their present equipment is obsolete in the sense that they can not operate it as economically as some competitors who have modernized their plants in the past year and the offer of the use of "Q" compound will permit them to delay a decision a little longer.

Other Specifications

The contract for the use of "Q" compound also calls for certain minimum specifications covering volatility and also sulphur content, the exact nature of these requirements not having been announced except that they would conform closely to those for Ethyl Gasoline.

Because these specifications have proved quite liberal in the case of Ethyl Gasoline, they are not expected to offer a handicap to refiners who wish to adopt the use of "Q" compound.

Limited at 70 Octane

In the requirement that the second grade of gasoline shall not have an octane value higher than 70 except where special authorization is given, the supposition is made that the Ethyl Gasoline Corp. will maintain a sufficiently wide difference in octane value between the two to fully justify the premium and the sales effort to be placed on the Ethyl Gasoline.

Also, under this arrangement, the company is able to advance the minimum as improvements in motor design are made and full advantage will be derived from the improved motor fuel.

Not Limited to Color

Except that red can not be used to color the second grade fuel, the refiner has the option of using any color. This provision is made to again protect the sale of Ethyl Gasoline.

As a further protection for Ethyl Gasoline, the new contract calls for little or no publicity to be given the fact the compound is used in the blend. A small sign 7 inches by 6 inches placed on the filling station pump and containing a notice that the gasoline contains tetraethyl lead is all that will be seen by the motorist to show the nature of the fuel. The use of the sign is intended more as a precaution against lead poisoning.

Heads Purchasing Agents

PAUL W. FENTON

Paul W. Fenton, purchaser for the Tide Water Oil Co., was elected president of the Purchasing Agents Association, at its annual meeting in Tulsa. W. L. James, Stanolind Oil & Gas Co., was elected first vice president; M. B. Heine, Phillips Petroleum Co., second vice president; H. D. Partridge, Indian Territory Illuminating Oil Co., national director; O. E. McClatchey, Barnsdall Oil Co., secretary-treasurer; Harold M. Cosgrove, editor of the Mid-Continent Purchaser, and J. R. Welch, assistant editor and business manager.

Italy Will Build Albania Pipe Line

NEW YORK, Apr. 17.—The Italian government, which has conducted extensive oil wildcatting operations in Albania, has completed arrangements for the construction of a pipe line between the Devol Field in Albania and the port of Valona.

Promising results from drilling activities have been encountered on an 800-hectare tract where the Devol and Osum Rivers join in Albania.

Development operations in Albania, as well as the pipe line building, are under the control of the Italian State Railways.

Oil and Railroad Men Agree on "Hot" Oil Bill

(Continued from Page 9)

in violation of the law of the state where produced or in violation of this act, and to encourage and assist the various states in their efforts to prevent waste and to limit the production of oil to the reasonable market demand therefor.

"(2) It shall be unlawful for any person to deliver to any carrier for transportation from any state, territory, or district of the United States to any other state, territory, or district of the United States, or to a foreign country, any crude petroleum or any of the products of crude petroleum, which crude petroleum has been produced in violation of any law of the state, territory, or district where said crude petroleum was produced.

"(3) It shall be unlawful for any common carrier or other person to receive for transportation or to transport knowingly in interstate or foreign commerce any crude petroleum, or any of the products of crude petroleum, which crude petroleum has been produced in violation of any of the laws of the state, territory, or district where produced.

"(4) It shall be unlawful for any person to receive or buy any crude petroleum or any of the products of crude petroleum with the purpose or intent of transporting or selling the same in interstate or foreign commerce, which crude petroleum has been produced in violation of the laws of any state, territory, or district where produced.

"(5) It shall be unlawful for any person to conspire with any other person or to make an agreement with any other person to procure the transportation in interstate or foreign commerce of any crude petroleum or of any of the products of crude petroleum, which crude petroleum has been produced in violation of any of the laws of the state, territory, or district where produced.

Power to Cabinet Officer

"(6) The Secretary of the Interior is hereby invested with the following powers and such incidental authority as may be necessary to carry this act into effect:

"(a) To investigate the oil industry in the United States and the methods of producing, transporting, refining, selling, and distributing such oil, and to prepare forecasts, from time to time, and as often as in the judgment of said secretary may be advisable, of the estimated demand during future periods for the consumption of oil within the United States and for export of oil from the United States.

"(b) To recommend to the oil-producing states production quotas of crude petroleum to be produced in each of such states, for the period as to which the secretary has estimated the demand for consumption and export as provided in the previous section.

"(c) To recommend to each oil-producing state the enactment of substantially uniform laws for the conservation of crude petroleum, the prevention of the premature exhaustion of the domestic supply, and for the limitation of production to the reasonable market demand.

"(d) To adopt and issue regulations from time to time for the proper enforcement and carrying out of the provisions of this act.

"7. The recommendations of the secretary of oil-producing states as to laws for the conservation of oil may include the following:

"(a) Regulation and control of drilling and producing so as to promote the maximum ultimate economic recovery of crude petroleum.

"(b) Retention underground of crude petroleum, the production of which would be in excess of marketing or transportation facilities or in excess of the reasonable market demand therefor.

"(c) Equitable apportionment amongst the various owners of the contents of a common source of oil.

"(d) A requirement for the most effective use of gas energy in the production of oil.

"(e) An authorization for the unit operation of a common pool.

"(f) Such other matters as to the secretary may seem proper for carrying out the purposes of this act.

"8. Any individual who violates any of the provisions of this act, and any officer or agent of a corporation who participates in the violation of this act by such corporation, shall be subject to a fine of not less than $1,000 and not exceeding $5,000, and by imprisonment for not less than one year and not exceeding five years. Any corporation which violates any of the provisions of this act shall be subject to a fine of not less than $1,000 and not exceeding $10,000, and each violation of this act shall constitute a separate offense.

"9. If any provision of this act or any clause, sentence, or part thereof be held unconstitutional or invalid for any reason, or the applicability thereof to any person, circumstances, commodity or class of transactions with respect to any commodity be held invalid, the validity of the remainder of the act and the applicability of such provision to other persons, circumstances, commodities and classes of transactions shall not be affected thereby."

Railroads Represented

The conference resulting in the approval of the bill introduced in the House by Representative Marland was also participated in by Judge Fletcher, counsel of the Railway Association of Executives, who approved its features in respect to rail transportation.

Fayette B. Dow, counsel of the National Petroleum Association; J. Howard Pew, president of the Sun Oil Co.; W. R. Boyd, Jr., executive vice president of the American Petroleum Institute; Russell B. Brown, secretary Independent Petroleum Association of America, and Representative Marland were present with Judge Ames, president of the American Petroleum Institute at conferences when the bill was discussed and agreed to.

Tax on Hot Oil and Imports

A bill similar to Senate 1,224 introduced by Senator Capper has been introduced in the House by Representative Marland with the added provision for a tax of one-tenth of 1 per cent on each barrel of crude transported in interstate commerce and a further tax of 50 cents a barrel on all crude or products which have been produced in violation of any quotas or allotments, these taxes being payable by the transportation company. It also provides that importations of crude oil and products imported without a certificate of necessity from the Secretary of the Interior shall pay an additional tax of 3 cents per gallon.

Constitutionality of Plan to Ban "Hot" Oil Argued

(Continued from Page 9)

Titus, "shows that it does not in fact conflict with the decisions cited as upholding power to forbid the transportation of oil produced in excess of market needs and against the laws of the states in which it is produced. This act of Congress of September 1, 1916, prohibited transportation in interstate commerce of goods made in a factory in which within 30 days prior to their removal therefrom children under the age of 14 years had been employed or permitted to work. The court held that this was not a regulation of interstate commerce but was an attempt to control the hours of labor of children in the states. The court reviewed in its opinion the lottery case, the Pure Food and Drug act cases, the Mann act cases and the Hepburn act cases prohibiting the shipment by a railroad in interstate commerce of coal mined by itself. The court then said:

"In each of these instances the use of interstate transportation was necessary to the accomplishment of harmful results."

Not Same Case

"It is clear that the child labor case is to be distinguished from the case we are considering for the following reasons," says Mr. Titus: "In that case there was no harmful effect upon the nation at large nor upon the states to which the

goods were shipped. The court said that the question of the hours of labor for children, for women and for men was a purely local affair and that each state was the best judge of the hours of labor within that state. The court commented on the fact that each state had passed laws limiting the hours of labor and that the question of the hours of labor was a matter 'purely local in its character' and therefore a matter of 'purely state authority.' This decision was one of the famous 5 to 4 decisions of the Supreme Court.

"It is, of course, a matter of opinion as to how the court as it is at present constituted would decide the same question were it again presented. But the court itself, in the case of Brooks vs. U. S., in upholding the act preventing the transportation of stolen automobiles in interstate traffic points out the real meaning of the child labor decision. In that case Chief Justice Taft wrote the opinion which was concurred in by a unanimous court.

"Applying the language of Mr. Justice Taft to the case we are considering, the premature exhaustion of the oil supplies of the United States will be most harmful to the people of the entire nation, and Congress can properly punish the interstate transportation of oil wastefully produced in violation of the regulations of the agency established by Congress for the purpose of conserving the supply of oil for the future necessity of the nation," says Mr. Titus, and in conclusion he adds:

"In the child labor case the court repeatedly states that the question of child labor was 'purely local' in its character, but it is obvious that the question of the waste of oil and the premature exhaustion of the oil resources of the nation is not a matter of 'purely local' concern, but a matter in which the whole nation has a most vital interest. This being true, under the decisions previously decided, particularly the cases upholding the commodities clause of the Hepburn act, and the numerous cases heretofore cited, there can be no doubt that Congress, in order to prevent great harm to the people of the United States, has the constitutional power to prohibit the interstate shipment of oil wastefully produced."

W. C. CLEVELAND DEAD

William C. Cleveland, retired oil producer and for many years prominent in northern Pennsylvania as a drilling contractor, died at his home in Smethport, Pa., on April 2. He was 68 years old.

California District Production Meeting Hears Good Papers

LOS ANGELES, Calif., Apr. 15.—Interesting papers were heard at the spring meeting of the California District Division of Production of the American Petroleum Institute held in the Engineers Club in Los Angeles, Thursday, April 6, and attended by approximately 400 members and guests of the Institute.

All of the officers were re-elected as follows: Chairman, Ralph D. Copley of the Standard Oil Co.; vice chairman of Los Angeles district, Bruce Barkis of the Rio Grande Oil Co.; vice chairman Ventura district, F. W. Hertel of the Associated Oil Co.; vice chairman San Joaquin Valley district, J. J. Wilt of the Standard Oil Co.'s Bakersfield office; treasurer, W. G. Corey of the Pacific Gear & Tool Works. W. L. McLain, chairman of the advisory committee, also was returned to office. Owing to the resignation of Norval White as Pacific Coast representative of the American Petroleum Institute, the chairman was vested with authority to appoint a secretary if necessity demanded.

Following the dinner and disposition of routine matters, a paper was read by Murray Putnam of the Standard Oil Co. on "Discussion of Drill Pipe Stresses." C. L. Clark and C. B. Kimberlin of the Kettleman North Dome Association discussed "Consideration of the Use of Pressure, Temperature and Sampling Instruments for Subsurface Work in Kettleman Hills and the Possible Application of These Data to Drilling and Production Procedure." A third paper, supplemented by moving pictures on the "Value of Gas Conservation and Efficient Use of a Natural Water Drive as Demonstrated by Laboratory Models" was presented by H. D. Wilde, Jr., of the Humble Oil & Refining Co., of Houston, Tex.

SOVIET OIL OUTPUT LOWER

NEW YORK, Apr. 17.—Crude petroleum production in Russia during February totaled 1,451,800 tons, as compared with 1,483,200 tons in January. Russian refinery throughput for February totaled 1,309,700 tons, as compared with 1,358,700 tons in the previous month. While drilling activities increased during February, 34,454 meters being drilled, the program was fulfilled to the extent of but 83½ per cent.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA
(Effective March 5, 1933)

For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field.)

Gravity—	Long Beach	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier	Montebello	LaHabra, Coyote	Santa Fe Springs	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga
14-14.9	$ .55	$ .55	$ .55	$ .55	$ .55	$ .55	...	$ .55	$ .55	$ .55	$ .55	$ .55	....	$ .49	$ .49	$ .49
15-15.9	.55	.55	.55	.55	.55	.55	....	.55	.55	.55	.55	.55	....	.49	.49	.49
16-16.9	.55	.55	.55	.55	.55	.55	....	.55	.55	.55	.55	.55	....	.49	.49	.49
17-17.9	.55	.55	.55	.55	.55	.55	....	.57	.55	.57	.55	.55	....	.49	.50	.49
18-18.9	.57	.55	.61	.61	.60	.61	....	.59	.58	.59	.55	.57	....	.49	.52	.49
19-19.9	.59	.57	.63	.64	.62	.64	....	.61	.61	.61	.55	.59	....	.49	.54	.49
20-20.9	.61	.59	.64	.67	.64	.66	....	.62	.63	.63	.55	.61	....	.52	.56	.49
21-21.9	.63	.62	.66	.69	.66	.68	....	.64	.66	.65	.55	.63	$ .57	.55	.58	.51
22-22.9	.65	.64	.68	.71	.69	.70	....	.66	.68	.67	.57	.65	.59	.57	.60	.53
23-23.9	.67	.67	.70	.73	.71	.72	....	.68	.70	.69	.60	.67	.62	.60	.62	.55
24-24.9	.69	.69	.72	.75	.73	.73	$ .65	.70	.73	.71	.62	.69	.64	.63	.63	.57
25-25.9	.71	.72	.74	....	.75	.75	.68	.72	.75	....	.65	.71	.66	.66	.65	.59
26-26.9	.73	.74	.75	....	.77	.77	.70	.73	.77	....	.68	.72	.69	.68	.67	....
27-27.9	.75	.76	.77	....	....	.79	.73	....	.80	....	....	.74	.71	.71	.69	....
28-28.9	.77	.79	.79	....	....	.81	.75	....	.82	....	....	.76	.73	.74	.71	....
29-29.9	.79	.81	.81	....	....	....	.78	....	.84	....	....	.78	.76	.76	.73	....
30-30.9	.81	.84	.83	....	....	....	.81	....	....	....	....	.80	.78	.79	.75	....
31-31.9	....	....	....	....	....	....	.83	....	....	....	....	.82	.80	.82	....	....
32-32.9	....	....	....	....	....	....	.86	....	....	....	....	.84	.83	.85	....	....
33-33.9	....	....	....	....	....	....	.86	....	....	....	....	.86	.85	.87	....	....
34-34.9	....	....	....	....	....	....	.86	....	....	....	....	.88	.87	....	....	....
35-35.9	....	....	....	....	....	....	.86	....	....	....	....	.90	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	....	.92	....	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	.94	....	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	.96	....	....	....	....
39 and over	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

Signal Hill—Met on same day by The Texas Company, Union Oil Co. and General Petroleum Co., and Associated Oil Co.

Huntington Beach—The Texas Company, Union Oil Co., General Petroleum Co. and Associated Oil Co. schedules stop at 26-26.9 degrees, 75 cents.

Seal Beach, Alamitos Heights—The Texas Company met all prices; Union Oil Co., General Petroleum Co. and Associated Oil Co. schedules stop at 26-26.9 degrees, 75 cents.

Athens, Rosecrans, Domingues—Union Oil Co. schedule stops at 25-25.9 degrees, posting 32-32.9 degrees, 85 cents; 33-33.9 degrees, 87 cents; 34-34.9 degrees, 89 cents; 35-35.9 degrees, 90 cents. Associated Oil Co. met Standard Oil Co. schedule; General Petroleum Co. met Standard Oil Co. prices, stopping at 32-32.9 degrees at 86 cents.

Torrance—Met by The Texas Company. Met by Associated Oil Co, General Petroleum Co. and Union Oil Co., up to 25-25.9 degrees, at 75 cents.

Inglewood—Met by Associated Oil Co. and General Petroleum Co.

Playa Del Rey—(Prices subject to 5 cents per barrel gathering charge. Met by Union Oil Co. schedule starting at 19 gravity.

Olinda-Brea Canyon—Met by Union Oil Co. Met by General Petroleum Co., up to 25-25.9 degrees at 75 cents.

Santa Fe Springs—Met by The Texas Company, General Petroleum Co., Union Oil Co. and Associated Oil Co.; schedules start at 14-24.9 degrees, 64 cents, and end at 35-35.9 degrees, 90 cents.

East Coyote—Effective March 5, Union Oil Co.: 14 to 16.9 degrees, 55 cents; 17-17.9 degrees, 57 cents, with 2 cents added for each degree upward to 24.24.9 degrees, at 71 cents.

Richfield—Met by The Texas Company; met by Union Oil Co. up to 25-25.9 degrees, at 75 cents.

Montebello—Met by Union Oil Co. up to 25-25.9 degrees, at 65 cents.

Kern River, Mount Poso, McKittrick, Sunset, Midway, Elk Hills, Buena Vista Hills—Effective March 5, Union Oil Co.: 11-13.9 degrees, 44 cents; 14 to 19.9 degrees, 49 cents; 20-20.9 degrees, 52 cents; 21-21.9 degrees, 55 cents; 22-22.9 degrees, 57 cents; 23-23.9 degrees, 60 cents; 24-24.9 degrees, 63 cents; 25-25.9 degrees, 66 cents; 26-26.9 degrees, 68 cents; 27-27.9 degrees, 71 cents; 28-28.9 degrees, 74 cents; 29-29.9 degrees, 76 cents; 30-30.9 degrees, 79 cents. Associated Oil Co. scheduled in Midway, Elk Hills and Buena Vista Hills starts at 11 to 13.9 degrees, 44 cents; same as Union Oil Co. schedule from 14 to 19.9 degrees; 20-30.9 degrees, 79 cents. General Petroleum Co.: Effective March 5 in Midway-Sunset same as Associated Oil Co.; Fruitvale, Kern Front, Kern River, Mount Poso and Round Mountain, 49 cents for all grades.

Montebello—Met by Union Oil Co. up to 25-25.9 degrees, at 65 cents; The Texas Company's schedule in Montebello and North Whittier, 14 to 21.9 degrees, 55 cents; 22-22.9 degrees, 57 cents; 23-23.9 degrees, 60 cents; 24-24.9 degrees, 62 cents; 25-25.9 degrees, 65 cents; 26-26.9 degrees, 68 cents.

Santa Paula—Union Oil Co., March 5, 14 to 19.9 degrees, 55 cents; 20-20.9 degrees, 56 cents, with 1 cent added for each degree upward to 25-25.9 degrees, at 61 cents, and then 2 cents added for each degree upward to 30-30.9 degrees, at 71 cents. The Texas Company posts similar schedule in Santa Paula and Shiells Canyon.

Lost Hills-Belridge—Met by Associated Oil Co. and Union Oil Co., with Union Oil Co. paying 44 cents for 11 to 13.9 degrees gravity.

Coalinga—Met by Union Oil Co. and Associated Oil Co. on March 6 and General Petroleum Co. on March 15, but latter company and Associated Oil Co. posted 44 cents for 11 to 13.9 degrees effective March 5.

Ventura Avenue—Associated Oil Co., March 5, 22-22.9 degrees, 58 cents, with 2 cents added for each degree up to and including 30-30.9 degrees at 74 cents. Effective March 15, General Petroleum Corp.

Orcutt—Union Oil Co., effective March 5: From 16 to 19.9 degrees, 49 cents; 20-20.9 degrees, 52 cents; 21-21.9 degrees, 55 cents; 22-22.9 degrees, 57 cents; 23-23.9 degrees, 60 cents; 24-24.9 degrees, 63 cents; 25-25.9 degrees, 66 cents; 26-26.9 degrees, 68 cents.

Kettleman Hills—Effective March 5, Standard Oil Co., Union Oil Co. and Associated Oil Co.: 33 to 33.9 degrees, 66 cents, with 2 cents added for each degree upward to 39-39.9 degrees at 78 cents. Effective March 15, General Petroleum Corp.

Elwood—Prices f.o.b. ship—Standard Oil Co. of California, effective March 5: 32-32.9 degrees, 83 cents; 34-34.9, 85 cents; 35-35.9 degrees, 87 cents; 36-36.9 degrees, 89 cents; 37-37.9 degrees, 91 cents. Met by Union Oil Co.

Newhall, McKittrick and Kern River—Standard Oil Co. of California, 55 cents for all grades, effective March 5.

Wheeler Ridge—Standard Oil Co. of California, effective March 5: 14 to 20.9 degrees, 49 cents; 21-21.9 degrees, 50 cents; 22-22.9 degrees, 52 cents; 23-23.9 degrees, 54 cents; 24-24.9 degrees, 56 cents; 25-25.9 degrees, 58 cents.

Rincon—General Petroleum Corp., effective March 16: 22-22.9 degrees, 54 cents; 2 cents added for each degree upward to 30-30.9, at 70 cents.

Crude Oil Prices

(Continued from Page 27)

Fort Collins, Wellington and Greasewood, Colo., are on contract basis.

Florence (Jan. 18, 1933)	.23
Dutton Creek, Wyo. (Jan. 18, 1933)	.34
Rock Creek, Wyo. (Jan. 24, 1933)	.46
Franie, light (Jan. 18, 1933)	.31
Frannie, heavy (Jan. 18, 1933)	.20
Salt Creek	
See Stanolind Mid-Continent price schedule	
LaBarge.....Mid-Continent gravity scale	
Big Muddy (Jan. 18, 1933)*	.40
Grass Creek (Jan. 18, 1933)	.62
Grass Creek, heavy (Dec. 15, 1932)	.45
Elk Basin, light (Jan. 18, 1933)	.63
Lance Creek (Dec. 16, 1932)	.92
Poison Spider (Mar. 5, 1931)	.70
Hudson (June 2, 1931)	.65
Lander (Mar. 5, 1931)	.40
Rex Lake (Feb. 22, 1930)	1.10
Osage (Jan. 18, 1933)	.53
Lost Soldier (Apr. 12, 1932)	.80
Hamilton Dome (Dec. 16, 1932)	.25
Torchlight (Jan. 18, 1933)	.62
Greybull (Jan. 18, 1933)	.62
Cat Creek (Jan. 18, 1933)	.63
Pondera (Nov. 7, 1932)	.60
Sunburst, Mont. (Nov. 7, 1932)	.75
Hogback, N. Mex. (Jan. 18, 1933)	.65
Lea County, N. Mex. (Jan. 20, 1933)	.30
Maljamar (Jan. 20, 1933)	.25
Artesia-Jackson (Jan. 20, 1933)	.30

Note—Salt Creek, Cat Creek, Dry Creek, Dallas-Derby, Hudson, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. and remainder by Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective January 20, posted by Humble Oil & Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro.

*Posted by Continental Oil Co.

Middle Western States

OHIO OIL CO.
(Effective January 18, 1933)

Lima (Jan. 10, 1933)	$ .70
Wooster	.70
Illinois	.62
Indiana	.40
Princeton	.62
Plymouth	Shut in
Western Kentucky	.57
Midland, Mich. (Dec. 31, 1932)*	.95
Somerset, Ky. (Jan. 19, 1933)	.45
Muskegon, Mich. (Mar. 27)	See note

*Posted by Pure Oil Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted price. Muskegon: All companies pay $1 per barrel effective March 27. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and delivered through own pipe line.

Mexico

Panuco*	$ .42

*F.o.b. ship, based on March transactions and exclusive of production and export taxes and bar dues.

Canada

Ontario (Jan. 18, 1933):	
Petrolia*	$1.75
Oil Springs*	1.82
Turner Valley†:	
Crude oil, 31°-35.9° (Jan. 24, 1933)	1.41
Crude oil, 36°-49.9° (Jan. 24, 1933)	1.90
Crude oil, 50° up (Jan. 24, 1933)	2.41
Discolored naphtha (Jan. 24, 1933)	2.58
Crude naphtha (Jan. 24, 1933)	2.82

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Committees Are Appointed on Belting and Drilling

Standardization committees for oil field belting and cable drilling tools for 1933 have been announced by Charles F. Roeser, chairman of the general committee of the Division of Production of the American Petroleum Institute. In both instances the prior committees have been reappointed. E. H. Williams of Toledo is national chairman of the committee on cable drilling tools, with D. S. Faulkner, of Torrance, Calif., vice chairman, and F. J. Spang, of Butler, Pa., secretary.

A. H. Riney, Bartlesville, Okla., is national chairman, and L. B. Holland, Oklahoma City, secretary, of the committee on belting for oil field countries.

District and subcommitteemen on the two rosters are as follows:

Standardization of cable drilling tools: Eastern district subcommittee—F. M. Schell, chairman, Bradford; C. L. Bullock, New Lexington, Ohio; A. S. Heck, Spencer, W. Va.; A. L. Taylor, Clarksburg, W. Va.; J. L. Yerdon, Bradford.

Mid-Continent district subcommittee—George H. Jaques, chairman, Tulsa; Arthur Brewer, Winfield, Kans.; H. W. David, Oklahoma City; Harvey Davis, Tulsa; C. M. Murray, Tulsa; Harold N. Pardee, Tulsa; J. E. Winters, Wichita.

Southwestern district subcommittee—M. B. Sweeney, chairman, Dallas; W. S. Geary, Dallas; M. B. Hurley, Big Spring, Tex.; H. A. Melat, Fort Worth; K. L. Sappington, McCamey, Tex.

Rocky Mountain district subcommittee—J. G. Dyer, chairman, Parkerton; C. D. Buffett, Casper; John Burgess, Parkerton; M. J. Foley, Casper; M. T. Rathvon, Casper.

Manufacturers' subcommittee—F. J. Spang, chairman, Butler; O. H. Attridge, Chattanooga; F. J. Hinderliter, Tulsa; W. H. Kesselman, Parkersburg; C. R. Phillips, Mannington, W. Va.; E. H. Williams, Toledo; William Wright, Tulsa.

California district subcommittee—D. S. Faulkner, chairman, Torrance, Calif. Members to be appointed.

Gauge subcommittee—F. J. Spang, chairman, Butler; D. R. Miller, Washington, D. C.; S. B. Terry, Hartford; E. H. Williams, Toledo.

Standardization of belting for oil country use: Eastern district subcommittee—No committee appointed.

Mid-Continent district subcommittee—Glenver McConnell, chairman, Tulsa; G. S. Bays, Tulsa; E. L. Bell, Drumright; H. O. Helvie, Tulsa; L. B. Holland, Oklahoma City; C. C. McMamare, Tulsa; H. W. Manley, Tulsa; H. E. Schafer, Tulsa; Ray Skinner, Tulsa; D. L. Trax, Tulsa; John P. Winters, Eldorado.

Southwestern district subcommittee—W. C. Shutts, chairman, Houston; F. D. Bostaph, Fort Worth; J. F. Champion, Ranger; J. Fred Doerge, Homer; D. B. Harris, Tyler; Charles Homer, Houston; S. D. Jackson, Shreveport; R. B. Leggett, Seguin; B. R. Newberry, Dallas; F. R. Oldham, Houston; C. S. Sanders, Fort Worth; R. G. Scott, Smackover; Mel Shugert, Fort Worth; W. C. Taylor, Shreveport; W. C. Thomas, Lake Charles; J. L. Wheatley, Ranger.

Rocky Mountain district subcommittee—H. W. Ladd, chairman, Casper; J. G. Dyer, Parkerton; K. D. Pardee, Billings.

California district subcommittee—J. A. Jones, chairman, Los Angeles; H. A. Brett, Los Angeles; George H. Barry, Los Angeles; C. E. Coleston, McKittrick (alternate to W. C. Wickersham); William H. Geiss, Los Angeles; J. R. Gignoux, Los Angeles; J. M. Grant, Los Angeles; L. A. Holmes, Santa Fe Springs; J. M. Johnson, Los Angeles; R. A. March, Los Angeles (alternate to J. R. Gignoux); H. N. Marsh, Los Angeles; V. V. Mason, La Habra; K. N. Santjian, Los Angeles; L. R. Smith, Los Angeles (alternate to J. A. Jones); W. D. Smith, Los Angeles; W. C. Wickersham, Los Angeles.

Manufacturers' subcommittee—V. A. Cosler, chairman, Buffalo; J. A. Fenwick, Newark; R. H. Goebel, New York; Charles E. Hathaway, Chicago; B. A. Keiley, Passaic; H. E. Morse, Akron; Arthur R. Shurtleff, Chicago; C. O. Streeter, Shrewsbury.

Engineering subcommittee—D. L. Trax, chairman, Tulsa; G. S. Bays, Tulsa; E. L. Bell, Drumright; G. H. Bowlus, Los Angeles; L. B. Holland, Oklahoma City; Glenver McConnell, Tulsa; V. V. Mason, La Habra; C. S. Sanders, Fort Worth; W. C. Shutts, Houston.

Appointments to Proration Positions in Oklahoma Shocked the Oil Industry

OKLAHOMA CITY, Okla., Apr. 15.—The action of the Corporation Commission in appointing Carl Giles of Norman as state proration umpire, and Crockett Scrivner of Pauls Valley as assistant umpire came as a distinct shock to Oklahoma oil producers, who had figured that one of the experienced petroleum engineers or practical production men whose names had been mentioned prominently would get the umpire appointment and that his assistant would be an equally experienced oil man.

None of the men who formed the choice of one or another group of oil men appears to have been considered by the majority of the commission.

The law plainly specifies that the men appointed by the commission to the two jobs shall have had at least seven years' practical experience as production men. Both Mr. Giles and Mr. Scrivner in their formal applications for the jobs claimed they had had experience in the oil business, but it is not known that they attempted to detail the required seven years of actual production experience. Mr. Giles is well known in politics and recently has been in charge of Governor Murray's unemployment relief work in Cleveland County. He is a veteran of the World War, attended Oklahoma University, where he took the arts and science course, and is a regent of the Claremore Military Academy. He owns a large stable in McClain County, where horses are trained for polo and show purposes.

Mr. Scrivner operated a store in the Healdton Field during the most active period of that field and in his application said: "I remained most of my time at that point operating the store and acquiring certain interests in the field, in operating and managing said interests."

Summarizing his oil field experience, Scrivner's application said: "I was an active director of oil well drilling in the Healdton oil field almost from the day the field was discovered. I was engaged there approximately two years. . . . My long experience in the oil business furnishes me with a clear insight into all phases of that industry. I am for that reason peculiarly qualified to fill the position for which I am an applicant to the satisfaction, distinction and credit of the Corporation Commission."

Mrs. I. L. Huff, one of the most active politicians in Creek County, who has been at the head of the State Bureau of Maternity and Infancy, was given the very difficult and exacting job of heading the clerical force of the umpire's organization, a department where all the field reports are submitted and records of drilling, production and other field data are compiled.

Edwin Dabney, appointed to the post of proration attorney, once served a term as attorney general of the state.

All the appointments were made possible by the votes of Commissioners Jack Walton and E. R. Hughes.

Governor Murray protests the appointment of Mr. Dabney as proration attorney and announced that he wanted it known that the whole "setup" was none of his doing.

Michigan Has 5,000-Barrel Well in New Porter Pool

MUSKEGON, Mich., Apr. 18.—Pure Oil Co.'s No. 1 State, NW SE Section 15-13n-1w, Porter Township, Midland County, came in at the rate of 5,000 bbls. today as the largest wildcat ever drilled in Michigan. It is a mile north of Michigan-Pacific's No. 2 J. Otway, brought in several weeks ago as a 3,000-bbl. producer, opening a new pool in the Mount Pleasant area. Pure Oil Co. has since brought in P. O. Mates' No. 1, direct east offset to the Otway, with initial flow of 2,900 bbls. Fifteen or twenty other wells have been started in the new Porter Pool, 13 miles southeast of the original Mount Pleasant Pool in Greendale and Chippewa Townships.

Muskegon Oil Corp.'s No. 1 Orman Trumbull, Section 11-11n-16w, Dalton Township, was dry through the Monroe at 2,500 feet.

CONROE EXTENSION

HOUSTON, Tex., Apr. 18.—The Conroe Field was extended a mile westward Tuesday by the completion of Strake Petroleum, Inc.'s No. 1 Schaeffer, C. R. Stewart Survey, which came in flowing at the rate of 90 bbls. per hour through a half-inch choke from sand at a total depth of 5,002 feet. The well adds approximately 2,000 additional acres to the proven territory and is in territory heretofore looked upon as condemned.

RIFE SUCCEEDS MELAT

FORT WORTH, Tex., Apr. 18.—M. O. Rife has been made general production superintendent for the Gulf Production Co., with headquarters at Fort Worth, to succeed H. A. Melat, retired.

Late Fields

OKLAHOMA

The first 38 Wilcox sand wells in the Oklahoma City Field to be gauged for new potentials show an average decline of 39 per cent from the previous potential. The new potential on these totals 105,250 bbls. per day, compared to the old figure of 169,780 bbls. per day. All but three of these wells show a decline. Wells showing increases are the Indian Territory Illuminating Oil Co.'s No. 1 Mary Sudik, with an increase of 44 per cent; Sinclair Prairie Oil Co.'s No. 9 Vencl, with 30 per cent, and Slick estate's No. 2 Dodd, with 52 per cent. Two wells would not flow, four cut out their connections before completing the four-hour flow, and one was showing 9 per cent water. Slick estate's No. 7 Terminal will be reconditioned on account of the fact it was making 12½ per cent sand when potential was taken.

Amerada Petroleum Corp.'s No. 1 Harrison, NW cor. SW, Section 33-7-4, Pottawatomie County, made 782 bbls. of oil in nine hours from Viola lime at 4,052-72 feet.

Watchorn Oil & Gas Co.'s No. 1 Zoeller, NW cor. SE, Section 5-6-5, Pottawatomie County, was treated with acid and made 415 bbls. of oil on April 15 and 315 bbls. on April 16 from the Simpson at 4,140 feet, total depth 4,317 feet.

The Wood Co.'s No. 1 Ashbey, Section 22-7-5, east of production in the St. Louis Field, in Pottawatomie County, made 75 bbls. of black oil in four hours after plugging back to 3,029-39 feet.

Barnsdall Oil Co.'s No. 1 Deere, SW cor. NW NW, Section 36-11-6, a wildcat well in Seminole County, found the Misener sand at 4,361-63 feet with nothing showing. It was drilling deeper.

F. H. McHenry and others' No. 1 Williams, NW cor. SE, Section 19-2-8w, Stephens County wildcat, made a flow of oil from sand at 2,414-22 feet. The well is now shut down repairing machinery.

E. M. Boring and Amos Drilling Co.'s No. 1 Riddle, NE cor. NW SW, Section 4-1s-3w, a wildcat northwest of the Tatums Field, Carter County, was drilling the cement plug at 1,798 feet. The well found what is estimated to be 10,000,000 feet of gas in sand at 2,015-38 feet before the casing was cemented.

R. C. Jones and others' No. 1, NW cor. NE NW, Section 19-16-14, Okmulgee County, near the Little Chicago Pool, was drilling at 1,500 feet. The well had 100,000 feet of gas at 1,005 feet.

KANSAS

The Stratman Pool, in Ellsworth County, where potential tests were taken on April 12, declined 3,757 bbls., or 37 per cent, from the previous potential. The 11 wells in this pool now show a potential of 6,725 bbls., compared to 10,482 bbls. All of the wells are producing from the Siliceous lime.

Roy Ramsey and others' No. 1 well, on the Chase townsite, in approximately NW cor. SW Section 32-19-9w, Rice County, made 140 bbls. of oil in 20 hours from the Siliceous lime.

Shawver and others' No. 1 Kelly, SW cor. NW Section 22-20-10w, a quarter of a mile east of production in the Schurr Pool, Rice County, was originally completed as a gas well in the shallow sand at 2,600 feet, was recently drilled deeper to the Siliceous lime at 3,335-41 feet, where water rose 200 feet in the hole. The other wells in the Schurr Pool are producing from Siliceous lime and this well indicates that the east edge of the pool has been found.

Gypsy Oil Co.'s No. 2 Lovett, NE cor. SW NW Section 24-19-2w, the 108th Viola lime well to be completed in the Ritz-Canton-Decker Field in McPherson County, found the Viola lime at 3,386-88 feet. No estimate was made of the production.

Lario Oil & Gas Co.'s No. 1 Wilke, C SE NE Section 34-20-4w, recovered the lost tools and was drilling deeper at 3,793 feet. It is a wildcat located about 6 miles southwest of the townsite of McPherson, in the same county.

NEW YORK

C. E. Ivers Interests report that its No. 1 Skuse, in the Geneva gas field, Ontario County, New York, is good for 1,500,000 feet of gas at 1,135 feet. The Great Northern Gas Co. completed a 6,000,000-foot gasser at 1,070 feet extending the Geneva Field a half mile north. Four new drilling wells have started in the field. The completions are producing from the Niagara lime.

CHAMPLIN DENIED WRIT

The first case filed against the Oklahoma Corporation Commission's enforcement of the new proration law was the Champlin Refining Co.'s suit in the State Supreme Court on April 17, for a writ of prohibition against taking of potentials in the Wilcox sand zone in the Oklahoma City Field. The Champlin company based its objections on the failure of the Corporation Commission to give 10 days' notice as provided in the new law, and that the open flow method was wasteful as to natural gas and that the plaintiffs had had no time in which to object to the order of the commission. The writ was denied.

M. F. BRENNAN DEAD

Michael F. Brennan, 39 years old, Mid-Continent district manager for the Bradford Motor Works, died in Tulsa on Monday, April 17, after a three months' illness. Deceased came to Tulsa from Bradford, Pa., 15 years ago, representing the Bradford Motor Works, manufacturers of oil well equipment, and became widely known in the five Mid-Continent oil states. Mrs. Brennan and two children, and two brothers, H. W. and R. J. Brennan of Bradford survive.

DETROIT-TOLEDO GASOLINE LINE

TOLEDO, Ohio, Apr. 17.—Reports are that the Pure Oil Co. and the Sun Oil Co., both with large refineries in Toledo, are jointly interested in a contract for 4,500 tons of pipe placed with the Youngstown Sheet & Tube Co. and National Tube Co., for a Detroit-Toledo pipe line for transportation of gasoline. The line will be 79 miles long and about 7 or 8 miles within Toledo city limits.

Program for the May Meeting of A.P.I. at Tulsa

(Continued from Page 10)

COMMITTEE MEETINGS
(Time scheduled subject to change)

Tuesday, May 16

Morning

9:30 Committee on Disposal of Refinery Wastes. (Room 318).
Chairman, John S. Hess; Secretary, D. V. Stroop.

Afternoon

2:30 Committee on Refinery Statistics and Economics. (Room 312).
Chairman, D. J. Moran.

Wednesday, May 17

Morning

9:00 Committee on Standardization of Refinery Equipment. (Room 319).
Chairman, A. E. Pew; Secretary, R. P. Anderson.

9:30 Subcommittee on Car Service. (Room 314).
Chairman, J. M. O'Day.

9:30 Subcommittee on Railroad Equipment. (Room 311).
Chairman, D. V. Stroop.

9:30 Committee on Accident Prevention in Refining. (Room 321).
Chairman, C. W. Smith; Secretary, H. N. Blakeslee.

9:30 Topical Committee on Development and Production Research. (Room 306).
Chairman, H. D. Wilde, Jr.

9:30 Topical Committee on Well Spacing. (Room 304).
Chairman, Fred E. Wood.

9:30 Topical Committee on Metallurgy of Oil Field Equipment. (Room 307).
Chairman, Blaine B. Wescott.

9:30 Topical Committee on Production Practice. (Room 308).
Chairman, E. H. Griswold.

9:30 Topical Committee on Drilling Practice. (Room 309).
Chairman, A. C. Rubel.

9:30 Committee on the Standardization of Rotary Drilling Equipment. (Room 301).
Chairman, E. J. Nicklos; Secretary, E. E. Greve.

9:30 Subcommittee on Uniform Tank Measurements and Gauge Tables. (Group 1, Measuring, Sampling and Testing Crude Oils). (Room 305).
Chairman, Ray F. Shumaker; Secretary, C. A. Young.

9:30 Subcommittee on Natural Gas. (Group 2, Measuring, Sampling, and Testing Natural Gas and Natural Gasoline). (Room 302).
Chairman, George P. Bunn.

10:00 Executive Committee of the Board of Directors. (Sixteenth Floor—Lounge Room).

10:00 American Petroleum Industries Committee. (Room 313).
Chairman, H. T. Klein.

Afternoon

2:00 Board of Directors. (Sixteenth Floor—Lounge Room).

2:00 Central Committee on District Activities. (Room 320).
Chairman, W. H. Meier; Secretary, C. A. Young.
(All visiting chapter officers invited.)

2:00 Subcommittee on Natural Gasoline. (Group 1, Measuring, Sampling and Testing Natural Gas and Natural Gasoline). (Room 303).
Chairman, S. S. Smith.

2:00 Committee on Railroad Transportation. (Mezzanine Floor—Junior Ballroom).
Chairman, Fayette B. Dow; Secretary, D. V. Stroop.

2:00 Committee on Accident Prevention in Marketing. (Room 321).
Chairman, J. L. Risinger; Secretary, H. N. Blakeslee.

2:00 Committee on Testing Methods and Specifications. (Sixteenth Floor—Banquet Hall).
Chairman, K. G. Mackenzie; Secretary, R. P. Anderson.

3:00 Central Committee on Refinery Technology. (Sixteenth Floor—Banquet Hall).
Chairman, Walter Miller; Secretary, R. P. Anderson.

Evening

8:00 Division of Production, General Committee. (Mezzanine Floor—Junior Ballroom).
Chairman, Charles F. Roeser; Secretary, C. A. Young.

8:00 Division of Refining, General Committee. (Sixteenth Floor—Lounge Room).
Chairman, D. J. Moran; Secretary, R. P. Anderson.

8:00 Division of Marketing, General Committee. (Sixteenth Floor—Banquet Hall).
Chairman, W. T. Holliday; Secretary, Paul E. Hadlick.

8:00 Committee on Corrosion of Refinery Equipment. (Room 319).
Chairman, Walter Samans; Secretary, D. V. Stroop.

8:00 Committee on Accident Prevention in Production. (Room 321).
Chairman, R. E. Donovan; Secretary, H. N. Blakeslee.

Thursday, May 18

Morning

9:30 Main Committee on Measuring, Sampling and Testing Natural Gas and Natural Gasoline. (Room 302).
Chairman, E. F. Rice; Secretary, C. A. Young.

9:30 Committee on Corrosion of Oil Field Equipment. (Room 319).
Chairman, C. R. Weidner; Secretary, D. V. Stroop.

12:00 Program Committee, Division of Refining. (Luncheon). (Mezzanine Floor—English Room).
Chairman, R. T. Haslam; Secretary, R. P. Anderson.

Evening

8:00 Central Committee on Drilling and Production Practice. (Sixteenth Floor—Banquet Room).
Chairman, H. N. Marsh; Secretary, C. A. Young.

Friday, May 19

Morning

9:30 Committee on Fire Prevention in Oil Fields. (Room 319).
Chairman, George F. Prussing; Secretary, D. V. Stroop.

9:30 Joint Meeting:
Technical Subcommittee on Methods of Test for Crude Oil.
Chairman, R. P. Anderson.
Regional Subcommittees on Pipe Lines.
Chairman, E. L. Adams.
(Groups 2 and 3, Measuring, Sampling and Testing Crude Oil).

Afternoon

2:00 Advisory Committee on Fundamental Research on Occurrence and Recovery of Petroleum. (Room 303).
Chairman, H. H. Hill; Secretary, C. A. Young.

Manufacturing Lubricating Oils at Casper, Wyo., Plant

(Continued from Page 15)

temperature of 450° F., has been the method employed to date for solvent recovery from both raffinate and extract. Pipe stills will shortly take over the distillation, thus effecting an economy of time and reducing the total quantity of solvent in circulation.

In spite of the fact that the oils, especially the extracts, have been subjected to high temperatures in contact with Chlorex for periods varying from 48 to 60 hours, in batch distillation, reaction of the solvent with either raffinate or extract has been negligible. No coke is deposited in the stills or left in the reduced oils, and only a slight darkening of the raffinate is noticeable. No trace of Chlorex is left in the oils. Quantitative determinations of total chlorides in the reduced oils have been made at frequent intervals which reveal a content, calculated as HCl, varying from zero to 0.0017 per cent for the raffinates, and from zero to 0.010 per cent for the extracts. (A positive test for chlorides cannot be obtained upon either raffinates or extracts which have been percolated through, or contacted with, decolorizing clays.)

ties of the Chlorex solvent process. Heretofore refiners have been limited in the quality of lubricants which they could produce from the crudes readily available to them. Thus, while it has long been realized that even crudes bearing relatively low V.I. lub fractions could be made to yield small amounts of relatively good V.I. lubs through drastic chemical refining of the distillates (for example, with sulphuric acid or aluminum chloride) these methods have never been economically practicable for production of extreme increase in V.I. from crude to finished oil. With chemical refining processes for extreme increase in V.I. the obtainable yields have been found to be so small, the chemicals costs so high, and the portion of the oil rejected to sludge of such little value that these processes are considered economically impracticable. With a selective solvent such as Chlorex, on the other hand, maximum yields are obtainable while the extracts are in the form utilizable for cracking or for relatively valuable fuel.

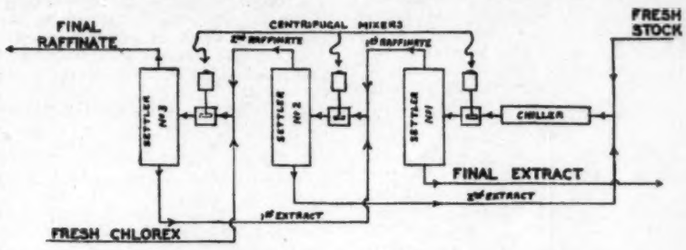


Figure 5—Flow diagram of chlorex extraction plant

Recovery of Chlorex from Condensed Steam

Since the solubility of Chlorex in water is about 1 per cent at ordinary temperatures, means of recovering the solvent from condensed steam were necessary. The solvent may be completely extracted from water by agitation with oil but the simpler method of flash distillation is employed at present. In practice, a recovery of 90 per cent of the total dissolved is effected through the distillation of about 12 per cent of the water solution.

Decomposition of Chlorex and Overall Recovery

Although Fife and Reid state that[9] dichloroethyl ether is both stable and noncorrosive[9], they do not give data to substantiate their claims. Extensive laboratory work was therefore carried out prior to the adoption of Chlorex as a selective solvent. Diverse tests repeatedly demonstrated the unusual stability of this chlorinated compound compared with others. The technical grade as received contains an average of 5.5 mgs. of HCl per 100 c.c. This amount is increased by only 12 mgs. upon refluxing a solution containing 10 per cent of extract and 0.6 per cent steel wool at 340° F. for four hours. Hydrochloric acid is formed in only very minute quantities during distillation with steam or under reduced pressures. Such traces should be neutralized after each distillation to prevent corrosion and minimize decomposition on subsequent distillations. Having once removed all traces of HCl, recovered Chlorex is found to be much more stable than the new product.

The loss of Chlorex in plant operation does not exceed 0.2 per cent per cycle. The solvent now in use has been distilled some 500 times, and its properties are substantially identical with those of the new solvent. Its efficiency as a selective solvent is equal in all respects to that of new material.

General Possibilities of the Process

In conclusion it seems desirable to point out some of the general possibilities of the Chlorex solvent process. Heretofore refiners have been limited in the quality of lubricants which they could produce from the crudes readily available to them. Thus, while it has long been realized that even crudes bearing relatively low V.I. lub fractions could be made to yield small amounts of relatively good V.I. lubs through drastic chemical refining of the distillates (for example, with sulphuric acid or aluminum chloride) these methods have never been economically practicable for production of extreme increase in V.I. from crude to finished oil. With chemical refining processes for extreme increase in V.I. the obtainable yields have been found to be so small, the chemicals costs so high, and the portion of the oil rejected to sludge of such little value that these processes are considered economically impracticable. With a selective solvent such as Chlorex, on the other hand, maximum yields are obtainable while the extracts are in the form utilizable for cracking or for relatively valuable fuel. Thus the process opens up to many refiners new possibilities for the production of high quality lubricating oils.

Acknowledgment

Acknowledgment is made of the assistance rendered by J. M. McGee and E. W. Ginet in securing extraction data and information pertaining to the stability of dichloroethyl ether. The writers also are grateful to E. N. Roberts for the data of Table 4, and to W. H. Bahlke and A. B. Brown for helpful criticism during the preparation of this manuscript.

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FOUNDER OF LUMMUS CO. DEAD

Walter E. Lummus, founder of the Walter E. Lummus Co., died recently in his home in Montclair, N. J. Mr. Lummus was born in Lynn, Mass, in 1867, and was a pioneer in the design and development of modern distillation equipment in this country. His first work in this field was in connection with the wood chemical industry in 1897, in improved distilling apparatus for refining methyl alcohol. He was one of the first to apply modern distillation methods to the petroleum industry. Mr. Lummus retained an active connection with the Lummus Co., builder of distillation plants, until his death.

NEWS FOR PETROLEUM REFINERS

Expect Announcement of New Pan American Plant

Definite announcement is expected before the end of the month to the effect that the Pan American Petroleum & Transport Co., a subsidiary of the Standard Oil Co. (Indiana) will soon start the construction of a new refinery on the Houston Ship Channel in Texas. The Pan American company has owned a site on the channel for some time and there have been reports from time to time that the corporation expected to build a refinery. These reports until last week have been denied when New York officials of the corporation indicated that an announcement regarding the project would be made before the end of the month. It is known that the corporation has asked bids on a large quantity of refinery equipment. It is understood that the initial capacity of the refinery will be around 25,000 bbls. of crude oil daily with the necessary cracking equipment for a well-balanced operation for a light oil plant. Negotiations to purchase the refinery near Houston of the Crown Central Petroleum Corp. have been dropped.

The plant will secure its crude oil supply from a pipe line of the Stanolind Pipe Line Co., a subsidiary of the Standard Oil Co. (Indiana) which connects the plant site to East Texas and other fields to the north in the Mid-Continent. The line has been used by the Sinclair Prairie interests which are now building their own pipe line connecting East Texas production to the Sinclair Refining Co.'s refinery at Houston.

The Pan American's operations which are now confined to the United States, the foreign properties having been sold to the Standard Oil Co. of New Jersey, are to be enlarged both in refining and marketing, according to present plans. A reorganization plan to be passed on by stockholders soon calls for the consolidation of operations now carried on largely through subsidiary companies. The company at present has refineries located at Baltimore, Md., Savannah, Ga., and Destrehan, La. Its marketing facilities include all the Atlantic Seaboard states with large distribution through American Oil Co., a subsidiary unit.

TO SUPPLY REFINERY

CHATHAM, Ontario, Apr. 15.—It is reported that Maple Leaf Petroleums, Ltd., for the past year a subsidiary of Imperial Oil, Ltd., is preparing to construct a pipe line to deliver crude from the Cut Bank Field in Montana to its refinery at Cutts, Alberta. The project would necessitate the laying of either 22 miles of line direct to Coutts or about 20 miles to tie in with the existing line from the Red Coulee Field. The survey already made is reported to contemplate the latter route. Canadian interests have been active in several drilling tests in the field and the proposed line is expected to take production from these companies, among others.

APPOINT MITCHELL COLONEL

Jefferson W. Mitchell, general superintendent of the Kansas City, Kans., refinery of the Phillips Petroleum Co., has been named a colonel on the staff of Governor Alfred M. Landon of Kansas. He is a World War veteran and served with the famous Sixth Marines. He received several decorations for his service and his regiment was decorated with the Croix de Guerre of France.

Lower Rates From Mid-Continent Plants to Northern Points Are Reinstated

With the reinstatement effective April 15 of rates first made effective March 15, 1932, Mid-Continent refiners again have the advantage of lower schedules to North Dakota, South Dakota and Minnesota amounting in some cases to more than three-fourths cent per gallon. The action of the Interstate Commerce Commission in authorizing the carriers to restore the rates apparently ends a long controversy which in effect places the Mid-Continent refiners on a more favorable rate basis in shipments to the northern states.

The Interstate Commerce Commission in its order in I.C.C. Docket 17,304, dated December 1, 1931, prescribed certain reduced rates on petroleum oil and its products from the Mid-Continent Field to North Dakota, South Dakota and Minnesota. These reduced rates were published effective March 15, 1932. Subsequently the northern lines petitioned the commission for reopening and reconsideration of this proceedings but their petition was denied by the commission. They then filed a bill of complaint in the Federal Court for the district of Minnesota, asking for issuance of a permanent injunction against the application of the commission's order in the above proceedings, the court issued a permanent injunction against the commission's order and the old rates were restored, effective September 22, 1932.

This case was appealed to the Supreme Court of the United States, which has dissolved the injunction which necessitates the carriers restoring the rates originally prescribed by the Interstate Commerce Commission in its order in Docket 17,304. The commission granted the carriers authority to restore the rates on five days' notice, originally published in compliance with this order. The rates were published effective April 15, 1933:

SUMMARY OF STATEMENTS RELATING TO BUSINESS OF VARIOUS PIPE LINES FOR MONTH ENDING MARCH 31, 1933

	Gross stocks	Runs from wells	Other receipts	Regular deliveries	Other deliveries
Nat. Transit	578,366.20	220,926.12	579,339.29	507,376.15	266,040.70
S. W. Pa. P. L.	396,799.99	58,745.45	643,459.90	241,781.33	291,326.28
Eureka P. L.	974,372.49	221,243.10	191,461.14	240,333.51	220,352.04
Buckeye P. L. (Macksburg)	323,144.57	222,332.51	147,396.44	257,355.99	103,722.02
Buckeye P. L. (Lima, etc.)	2,237,352.18	69,098.24	1,997,110.19	1,364,169.32	798,366.41
Buckeye P. L. (Cleveland)	42,974.87	10,107.75	236,067.96	1,465.48	235,834.07
Indiana P. L.	486,134.25	927.97	1,377,615.74	990,749.19	871,236.67
Southern P. L.	144,863.14	.....	50,515.04	46,334.33	45,911.54
Bradford Trans.	395,417.13	386,069.87	.....	413,477.90	.....
N. Y. Transit	81,683.17	31,273.00	194,085.17	182,838.73	.....
Northern P. L.	229,323.79	.....	343,292.71	.....	323,931.84
Tide Water P. L.	996,755.49	24,765.82	.....	426,205.12	.....
Tuscarora Dev.	9,442.84	.....	.....	262,637.30	.....
Valvoline P. L.	135,854.69	60,943.27	.....	27,698.06	13,753.69
Total March 31	6,917,884.30	1,306,440.20	5,760,144.55	5,082,421.47	2,669,475.29
Total February 28	6,906,418.69	1,163,239.15	4,954,940.06	4,635,751.61	2,166,295.81
Difference	11,465.61	143,201.05	805,204.52	446,669.86	513,179.48

North Dakota—	Effective March 15, 1932. Reinstated April 15, 1933: Ref. oil rate from Okla.*	Cents per gallon	Effective Sept. 22, 1932: Ref. oil rate from Okla.*	Cents per gallon	Difference: Rate	Difference: Cents per gallon
Bismark	70	.04620	82	.05412	12	.00792
Devils Lake	70	.04620	74	.04884	04	.00264
Dickinson	78	.05418	88	.05808	10	.00660
Fargo	57	.03762	62	.04092	05	.00330
Grand Forks	63	.04158	70	.04620	07	.00462
Jamestown	63	.04158	76	.05016	13	.00858
Mandan	73	.04818	85	.05610	12	.00792
Minot	75	.04950	81	.05346	06	.00396
Valley City	61	.04026	74	.04884	13	.00858
Williston	85	.05610	88	.05808	03	.00198
N. W. Minnesota—						
Bemidji	60	.03960	67	.04422	07	.00462
Crookston	63	.04158	70	.04620	07	.00462
Fergus Falls	55	.03630	61	.04026	06	.00396
Moorhead	57	.03762	62	.04092	05	.00330
Thief River Falls	65	.04290	74	.04884	09	.00594

*Rates shown do not include emergency rate of 1 cent per 100 pounds which became effective January 4, 1932, and are still in effect.

CAMINOL AWARDS CONTRACT

The Caminol Oil Co., Hanford, Calif., has awarded to the Southwestern Engineering Corp., Los Angeles, a contract for installation at the Caminol's Hanford refinery a large fractionating column which will enable the company to make the specification high-grade gas oil and kerosene.

MAY ADVANCE CRUDE PRICE

The 22 small skimming plants in the Osage district of Wyoming, which obtain their supply of crude from the Osage Field, may face a price of $1.25 for their purchases if efforts of the operators to raise to that figure are successful. The purchasers have been paying 75 cents plus a premium.

TAKE OVER RUSK REFINERY

SHREVEPORT, La., Apr. 15.—Oil Refineries, Inc., has been organized by M. J. Grogan and B. P. Crittenden and associates, of Shreveport, and has taken over the properties of the Rusk Refining Co., at Overton, in the East Texas Field. General offices of the company will be in Shreveport and sales will be handled by the Grogan Oil Co. of which Messrs. Grogan and Crittenden are the principal owners. The former was formerly president and the latter, vice president, of the Louisiana Oil Refining Corp., before its acquisition by Cities Service Co. The refinery at Overton has a crude oil capacity of 3,500 bbls. daily with a cracking oil capacity rated at 1,800 bbls. daily.

Two Small Plants Under Construction in Conroe

HOUSTON, Tex., Apr. 17.—Construction of two small refineries has been started at Conroe, both of which will be located adjoining each other at Grand Lake siding south of Conroe on the Houston-Conroe road and the L&G.N. Railroad. One of these will be built by the Rainbow Oil & Refining Co. and the other by Munhall Refining Co., each being rated around 300 bbls. daily. Conroe Oil & Refining Co.'s 250-bbl. plant, which has been in operation since shortly after the Conroe Field came in, is located directly across the road.

It is reported that another plant with a capacity of 5,000 bbls. will be started soon but no definite announcement has been made by the company.

Farmers Try Being Their Own Refiners in Montana

A unique situation developed in Montana as a result of the distribution of circulars by county agents of the agricultural extension service telling how the individual farmer can distill his own gasoline out of crude oil with a barrel and a set of coils. There was an immediate response and sales of crude in 1-bbl. lots at $1 per barrel soon jumped to 200 bbls. per day in the Cut Bank and Kevin-Sunburst Fields.

Many of the farmers used automobile radiators for cooling apparatus. They saved 6 cents per gallon in taxes alone. The fad was spreading so rapidly that the operators became concerned and discontinued the sale of small-lot crude. The refiners, in turn, have helped out by taking the crude withheld from the farmers. The situation appears to have passed the crisis, although the farmers are talking of shipping in crude from East Texas.

Along with this development is another. Small skimming plants are springing up in numerous localities throughout the Rocky Mountain area. There are 22 of them in the Osage district in Wyoming alone. Another has just been completed in South Dakota. Others have sprung up in Buffalo, Cody, Clearmont and Moorcroft, in Wyoming; in Berthoud, Boulder, Orchard, and in Montezuma County in Colorado, while there are three in the Bloomfield district in San Juan County, New Mexico.

NEW WEST TEXAS PLANT

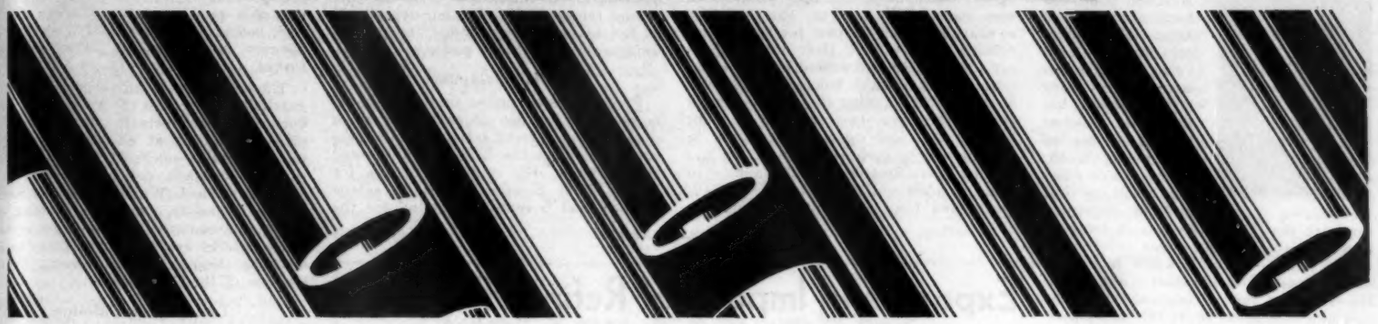
FORT WORTH, Tex., Apr. 17.—George Sonricker of Breckenridge and Arthur Tucker of Graham are constructing a 400-bbl. refinery approximately 3½ miles west of the McMillan Pool, and will lay a 2-inch line to connect with two wells there taking the crude which has been going to tanks and also shipped out by tank cars from Benoit on the Santa Fe Railroad. A five-year contract has been signed by the refinery builders and the Golden Petroleum Co. in which the latter is to supply a minimum of 25 bbls. per day to the refinery during that period.

Refined products from the above refinery will be marketed locally by tank trucks, the refinery being located on Highway No. 4 which connects Abilene, Ballinger and San Angelo.

FIRE AT EAST TEXAS PLANT

The Carnation refinery, owned by T. E. Patton and associates, Gladewater, Tex., was damaged by fire on April 13. A still explosion was said to have started the blaze which consumed six 5,000-bbl. tanks and four 250-bbl. tanks. This is one of the newest plants constructed in the Gladewater area, and has been in operation but a short time.

NEW HIGH STANDARDS OF QUALITY FOR REFINERY TUBES



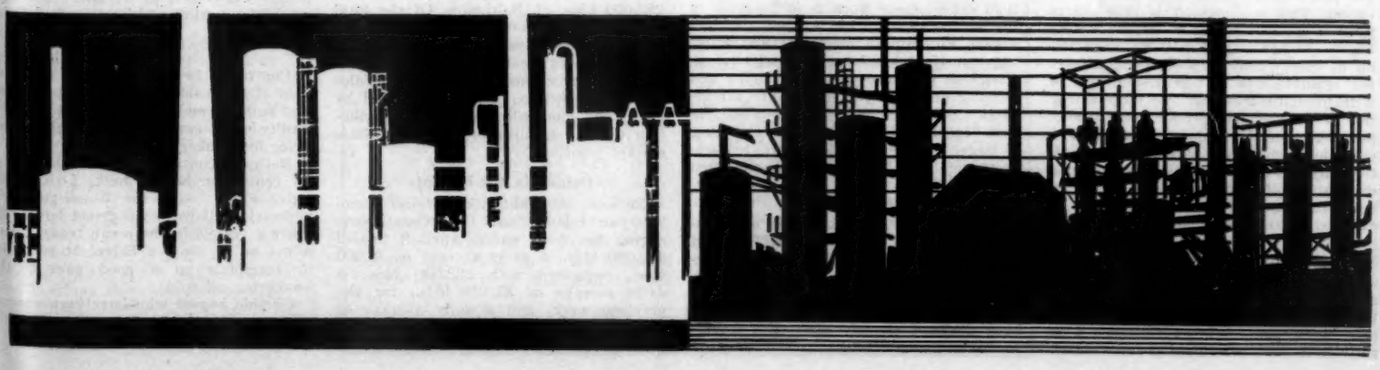
Timken---the world's largest manufacturer of alloy steel tubes---offers a complete line of refinery tubes, made under Timken methods of quality control, by men thoroughly experienced in the manufacture of all the analyses in refinery use.

These Timken alloys include 18-8, 5% chrome, 5% chrome with molybdenum, 5% chrome with tungsten, carbon molybdenum and plain carbon. Furthermore, if your type of application calls for alloys with high creep resistance, you have available Timken Manganese Molybdenum or Timken Chrome Molybdenum, special alloy steels developed by Timken for high creep applications.

You will find in Timken tubes, new high standards of quality, uniformity and workmanship.

THE TIMKEN STEEL AND TUBE COMPANY, CANTON, OHIO

TIMKEN STEEL TUBES



East Coast Refined Market More Firm as Trade Watches Group 3 and Gulf Developments

By A. E. MOCKLER
New York Bureau, The Oil and Gas Journal

NEW YORK, Apr. 17.—While East Coast gasoline markets developed a firmer undertone during the week under the stimulus of considerably broader buying, prices continued unchanged at previous low levels. Refiners here are talking higher prices, but the East Coast market has reacted so strongly in the past to price changes at the Gulf and in Group 3 territory that the trade here is awaiting developments in those areas before venturing a price advance which might not be sustained. With the start of the motoring season at hand refiners are unwilling to make a false move at this time, fearing the probable effects on retail markets throughout the area if the season should be ushered in by widespread price cutting in tank car markets. Even at current low price levels at refineries here motor fuel from the Gulf can still be laid down here at a price fractionally under the prevailing tank car quotations named by leading refiners, and any increase in posted prices, it is felt, would probably bring a flood of low-priced gasoline in from outside refinery centers.

Last week's fuel oil markets gave further evidence of strength during the short week of trading, which was interrupted by the general observance of Good Friday as a holiday and the holiday which followed. Buyers were in the market for fuel oil in cargo lots, but reported that nothing could be worked at the Gulf under 55 cents, although some sellers had been quoting the market at that point at 50 cents. California sellers were quoting an inside of 45 cents a barrel. Refiners here are talking an early advance in the posted price for bunker "C" oil, and the sharp falling off in imports is expected to speed the upward movement.

Tendency to Mark Time

While the present statistical position of the refined products market here is fairly strong, with the possible exception of lub oils, refiners are still somewhat apprehensive over the fact that possible unrestricted production from flush producing areas may be witnessed unless present efforts to rationalize production prove successful at an early date. With this condition prevailing, the general tendency is to mark time pending further developments.

Reports from Mexico and Venezuela during the week indicated that American companies operating in those countries are speeding up their activities to some extent. This tendency, it is believed, reflects a general policy of integrating domestic producing and refining operations on a scale where only domestic marketing requirements will be taken care of, with foreign marketing, to a large extent, to be supplied from the nearby foreign production of the major companies. This condition, naturally, will apply only to the major companies with adequate production in Mexico and South America, and will not mean an entire cessation of exports, even on the part of such companies.

Consumption Increasing

Warmer weather throughout the East materially increased gasoline consumption throughout the territory during the past week, and refiners reported more activity in tank car shipping departments than for some time past. The early advent of daylight saving, which is scheduled to become effective here next week, will further stimulate motoring, it is felt, with a corresponding gain in gallonage. Volume of motor fuel business in some parts of the territory has picked up so sharply during the past few weeks that refiners believe that their total gallonage for the year will exceed by far earlier estimates on probable consumption in this area. Notwithstanding this more cheerful outlook, however, local refiners are not inclined to build up larger reserves in anticipation of such an increase, but are holding operations down and planning to bring in additional motor fuel from California and from the Gulf to round out their marketing requirements during the summer season. Every effort will be made, it is indicated, to adhere closely to the plan for the reduction of inventories of oil above ground, and complete co-operation in this endeavor on the part of the remainder of the industry should go far to favorably readjust the present unfavorable statistical position.

Refinery Gasoline

Present posted prices in the tank car market are too low to permit of much shading, and current sales are being generally made on the basis of full posted quotations of 4¾ cents per gallon for U. S. Motor gasoline, under 65 octane number, and 5 cents per gallon for the higher test product. There has been a sharp increase in volume reported during the week, due largely to the sudden spurt in consumption incidental to more clement weather, but attributed likewise to the growing conviction among distributors that present tank car prices are at rock bottom for this period, and that an advance may be looked for in the near future.

There has been relatively little outside gasoline moving into the East Coast area during the past fortnight, due to the low prices prevailing at refineries here, and because of this condition the price structure in the tank car market has been well maintained. While conditions would appear to justify a mark-up in tank car motor fuel quotations in the East at this time, refiners are delaying action in this direction pending some stiffening in the position of the Gulf market.

Tank Wagon Gasoline

The principal development in the tank wagon market during the past week was the announcement by Shell Eastern of the elimination of the premium formerly charged on its "Super Shell." A premium of 3 cents a gallon has been hitherto charged for this product. In announcing this step, the company said, in part: "This drastic reduction in the price of Super-Shell is just one step in the policy of action which Shell has adopted to protect Shell dealers in the competitive warfare that is being waged in the gasoline retail field today. Shell has an obligation to every Shell dealer which must be discharged fully—Shell must keep him in business. Therefore, even though it costs us considerably more to manufacture Super-Shell than the regular Shell gasoline, nevertheless, we are willing to stand the difference when it means that the gallonages of our dealer outlets will all be increased." W. J. Filer, vice president of Shell Eastern, stated: "I wish to assure those who may consider this plan as price cutting that it should be regarded as a substantial improvement in the quality of the product which we sell to the public at the 'regular' price and is entirely consistent with our well-known policy of leading in quality. We continue to market Super-Shell ethyl as a double premium product at a single premium price."

Shell had been one of the few major companies marketing a premium motor fuel, aside from the regular ethylized premium grades.

There were no price changes of major importance in the eastern gasoline structure during the week, in so far as tank wagon and service station deliveries were concerned. Marketers reported that recently advanced price schedules were being generally maintained, and with gallonage showing a steady gain during the week the market undertone was definitely strong.

Fuel Oil

Continued firmness featured this division of the market during the past week, and market conditions indicated the probability of an early increase in the posted price for bunker "C" oil.

Refiners continue to post this oil at 75 cents per barrel, bulk, f.o.b. terminals, which, with the 5-cent-per-barrel concession allowed to contract buyers operating vessels in the ocean trade, means a net of 70 cents a barrel at refineries or terminals on a good part of the bunkering oil sold.

Outside buyers who have been endeavoring to pick up bunker oil cargoes re-

(Continued on Page 40)

Exports and Imports of Refined Products, Receipts of California Oils in the East

NEW YORK, Apr. 17.—With East Texas fields shut down, and the production situation still clouded with uncertainty, foreign buyers were loath to make heavy commitments on crude petroleum during the week, and suppliers were just as averse to quoting. One cargo for prompt lifting for France was reported booked around 67 cents a barrel, but with this exception the market remained at a standstill. At the close of the week, sellers were quoting crude oil at 65 to 68 cents a barrel for April loading, but were refusing to quote on inquiries for May cargoes.

Marked strength developed on Venezuelan crude during the week, and at the close of the period sellers were quoting 60 cents per barrel, which was 8 cents over the price at which recent business had been taken. With American oil companies cutting down their imports of crude and fuel oil, it had been expected that Venezuelan crude would be available in larger quantities, and possibly at lower prices, but this situation failed to materialize.

In the export gasoline market, sellers continued to quote U. S. Motor at 3¼ to 3⅜ cents per gallon at the Gulf, with 64-66 375 endpoint, held at 3⅝ to 3¾ cents, but no cargo business or inquiries were reported during the period.

While no cargo sales of export kerosene were reported from the Gulf during the week, the market was a shade easier, with prime white offered at 3⅞ cents per gallon and water white at 4 cents, reductions of one-eighth cent per gallon in each instance.

Reports from Mexico during the week indicated that considerable activity in field development work is in progress in that country, and it is believed that the decline in Mexican producing and refining operations has been definitely halted. American companies with producing and refining properties in Mexico are expected to steadily expand their operations in that country, and it is contemplated that a larger percentage of export requirements will be handled henceforth from Mexico.

British Demand

The threatened breaking off of diplomatic relations between England and Soviet Russia will have important repercussions on the export oil situation in this country, it is believed here.

While sales of Russian oil in England have declined sharply since the Anglo-American group of companies terminated its quota and price agreement with Russian Oil Products, Ltd., the British marketing subsidiary of the Soviet oil trust, large quantities of Russian refined products are still sold in the British market.

The possible embargo against Russian oil by England will result in a considerable increase in buying of both crude and refined products in the United States for shipment to the United Kingdom, it is believed.

Petroleum Exports

The following table shows exports of principal refined petroleum products reported from the Port of New York during the three weeks ended April 8 (all figures in gallons unless otherwise noted):

	Week ended		
	April 8	April 1	Mar. 25
Gasoline	935,000	15,000	5,000
Naphtha	180,000	5,000	.....
Kerosene	20,900	5,000	20,000
Fuel and gas oil	5,000	.....	1,000
Lubricating oil	710,000	740,000	2,736,000
Petroleum, ref'd.	395,000	290,000	35,000
	Pounds		
Petrolatum	175,000	.....	5,000
Paraffin wax	2,310,000	1,475,000	1,712,000
Refined	235,900	265,000	145,000
Scale	495,000	155,000	200,000
Lub. grease	750,000	825,000	745,000

Imports

Imports of crude and refined petroleum at principal United States ports for the week ended April 8 totaled 799,000 bbls., a daily average of 114,143 bbls., compared with 1,518,000 bbls., a daily average of 216,857 bbls., during the previous week, and a daily average of 154,929 bbls. for the four weeks ended April 8. There were no imports at Gulf ports during the week, 66,000 bbls. coming in at Baltimore, 450,000 bbls. at New York and 283,000 bbls. at Baltimore. Of the total week's imports, 550,000 bbls. consisted of crude petroleum and 249,000 bbls. were fuel oil.

Sharp reductions in import schedules are understood to have been ordered by importing companies, as their contribution toward stabilization of the domestic market position.

California Oil Receipts

Receipts of California refined petroleum at Atlantic and Gulf Coast ports during the week ended April 8 totaled 252,000 bbls., a daily average of 36,000 bbls., compared with 262,000 bbls., a daily average of 37,428 bbls., for the previous week, and a daily average of 53,179 bbls. for the four weeks ended April 8.

Sellers in Chicago Area Hopeful That Seasonal Gain in Gasoline Demand Will Aid Market

By R. C. CONINE
Chicago Bureau, The Oil and Gas Journal

CHICAGO, Apr. 17.—In spite of such constructive developments as considerably lower gasoline stocks for the country, lower crude runs to stills, and greatly curtailed crude oil production, the Chicago district refined petroleum product markets, with few exceptions, are weakening under the weight of excessive supplies. However, marketers in the district feel that this condition is being remedied rapidly through increased jobber buying activity, indicated refusal of more refiners to give away their products, and prospective heavy interrefinery buying if the crude situation continues to mend. It is true that a reaction against the dark pessimism which followed the failure of definite and immediate remedial action by the Federal Government to materialize has set in, but there are a number of favorable factors operating to lend a more cheerful aspect to the marketing outlook in the face of lowered prices. Among these is the announcement received by Chicago distributors from a Texas refiner: "We do not propose to continue to give gasoline and other products away, and pending the enactment and enforcement of adequate conservation laws, we are withdrawing from the market and are offering nothing for sale. Shipments will be made only to contract customers. We appreciate your patronage, but present prices are impossible."

Gasoline in Chicago District

That most of the refiners who market gasoline in the Chicago district, or rather, those who sell the larger volume, are increasing the antiknock value of their regular gasoline preparatory to the coming of the warmer months, is indicated in the following table giving the results of tests made at the close of last week. In the case of the two gasolines which show vapor pressures of 11.2 pounds and 10.7 pounds, the samples were taken by lowering a thief into the bulk storage tank. The other gasolines were picked up at the service stations. As noted before, some of these gasolines showed high potential gum and short induction periods which must be modified for practical purposes due to particular behavior of inhibitors. In actual storage the gasolines have shown good gum and antiknock stability. In order that comparisons may be made with tables published in these columns in the past the Research Method C.F.R. ratings are given.

Octane No.	74	71	68	68
Gravity	57.8	60.8	59.8	61.7
Initial	90	86	91	97
End point	379	395	386	375
5 per cent	120	117	124	122
10 per cent	138	135	139	138
20 per cent	168	168	172	168
Over at °—				
135°	12.2	13.3	13.2	11.8
139°	13.5	14.6	14.2	13.0
150°	17.0	18.1	17.7	16.9
212°	39.5	32.5	39.2	38.2
250°	56.0	52.5	54.2	55.8
265°	62.5	59.3	61.7	62.3
375°	97.5	96.3	97.2	98.8
385°	...	97.3	98.4	...
Recovery	97	96	94.6	96
Reid V. P.	11.2	10.7	10.2	9.8
Loss, per cent.	2	3	4.2	2.8
Residue	1.0	1.0	1.2	1.2

It may be interesting to point out here in connection with advancing antiknock ratings, the results of tests made on the alcogas, or farm relief gasoline containing 10 per cent of ethyl alcohol. Claims of greater power and higher octane number are made for the blend. Two samples were picked up at Peoria, one of the finished alcohol-gasoline motor fuel, and the other of the gasoline stock before addition of alcohol. The tests show that the gum stability of the motor fuel is lessened by addition of alcohol, while the octane rating is advanced 2.5 points by the alcohol. Knock tests were made on the old Series 30 engine: Alcogas, octane number, 69.5; gravity, 61.3; dissolved gum, 3 mg./100 c.c.; induction period (steel bomb), 1 hour; potential gum, 662 mg./100 c.c.; vapor pressure, 10.5 pounds. The gasoline stock before addition of alcohol tested as follows: Induction period increased to 3 hours; potential gum reduced to 226 mg./100 c.c., and octane number lowered to 67. Other tests on alcohol-gasoline were: Initial, 98; endpoint, 403; recovery, 96.2; residue, 1; loss, 2.8.

Gasoline Demand Increasing

Gasoline demand in the Chicago district and the surrounding territory is advancing rapidly, and distributors are far more optimistic than the lower quotations in the gasoline tank car markets might lead one to expect. These distributors say that while jobber buying has not shown any departure from the day-to-day policy, gasoline movement is steadier and in much better volume. This situation is making the marketers hopeful that the surplus of material available in the district will be absorbed soon. While the ruling prices are lower than last week, it must be remembered that the movement on the low of the price range would scarcely be worth considering if open market buying were on anything like a normal scale. One result of the exceedingly low quotations published may be to discourage the practice of offering contract material at so much under the low of daily published prices. This practice has done much to break down the gasoline tank car markets, and the future may see some beneficial adjustments growing out of the present crisis.

Gasoline Tank Car Markets

Practically all of the gasolines listed are reflecting the liquidating moves of Texas and Oklahoma refiners. Monday's prices were lower as follows: U. S. Motor, regular grade, 2⅛ to 2⅜ cents, down an eighth of a cent; premium grade, 2⅜ to 2⅝ cents, down an eighth of a cent; third grade, 1⅞ to 2⅛ cents, down an eighth of a cent; 60-62 400 endpoint gasoline, 2 to 2¼ cents, down an eighth of a cent; 64-66 375 endpoint gasoline, 2⅜ to 2⅝ cents, down an eighth of a cent; 68-70 360 endpoint gasoline, 2⅝ to 2⅞ cents, unchanged; aviation grade (fighting), 3 to 3¼ cents, down an eighth of a cent.

Refiners in the Chicago district are greatly puzzled over the Y-3557-G fighting grade aviation gasoline (Ethyl), which supercedes the F— specifications of the Government and advances the octane number requirement from 87 to 92. The new specifications on the domestic grade establishes the 58 octane number requirement for this grade.

Motor gasoline prices are at a point where there is little incentive to take advantage of the current low natural gasoline and blending naphtha markets. The blending naphtha is offered on the low octane U. S. Motor basis. Some quotations on the basis of the new Waukesha C.F.R. knock testing ratings are being made with the price at the low of the ruling market for the regular grade. A Texas refiner offers a 61-65 (new method) octane gasoline of 60-62 gravity, 396 endpoint and 80-85 initial, at 2¼ cents the Group. The material is 3C plus color. Some of the marketers in the Chicago district complain that they receive price quotation sheets from brokers and refiners showing low prices, but cannot get material delivered from these sources. "They are always just out of material," the Chicago distributors say.

Wide Dealer Discounts

At least one major oil company in the Chicago district is increasing the discount allowed to service station dealers to 5 cents a gallon. In Chicago the Q. D.A.s range from 2 cents for the third grade to 4 cents for Ethyl. However, competition for new outlets has been very keen in the metropolitan area and the willingness, apparently, of jobbers to sacrifice most of the profits in helping their accounts carry on a price cut campaign, has probably caused the refiners to consider increasing their retail facilities in preference to continuing their indirect largess to the dealers.

Special Naphthas

The special naphtha tank car markets continue to hold their ground in spite

(Continued on Page 44)

Do You Remember?

From The Oil and Gas Journal Files

25 Years Ago

April 20, 1908

Secretary of the Interior James R. Garfield decides to change Oklahoma lease forms on Indian-owned lands. The royalty will be fixed at one-eighth, instead of one-tenth as heretofore, with the Interior Department reserving the right to change it to as high as one-sixth. The term of future lease will be 5 years instead of 15 years.

W. D. Todd, of Chelsea, Okla., known in the East as the organizer of the Cornplanter Refining Co., at Warren, Pa., announces the completion of arrangements for the construction of a refinery at Texas City, near Galveston, Tex. It will be a 1,200-bbl. plant, Mr. Todd says.

A trainload of Tulsa boosters left today for an eastern trip to tell that part of Uncle Sam's domain of the advantages of Oklahoma in general and Tulsa in particular.

L. S. Haskell, of Pittsburgh, Pa., general auditor of the Gulf Pipe Line Co., is making his first tour of the Southwest looking over the company's property.

20 Years Ago

April 24, 1913

A well on the Charles S. Brown tract in the Artesia district, southeastern New Mexico, good for 15 or 20 bbls. a day of 35 gravity oil, has created much interest in that part of the State. Oil men have had much trouble in inducing landowners to grant leases as they "don't want their land dirtied with oil."

Shorter skirts decreed by fashion have stopped much of the complaint of women living in towns where roads are oiled, and who claimed their skirts were damaged by the oil.

The attorney general of Texas has brought suit against the Magnolia Petroleum Co., the Standard Oil Co., and others, seeking to recover penalties amounting to over $90,000,000. Officials of the companies sued do not appear to be worried over the outcome.

Frank P. Peterson, one of the foremost experts on the manufacture of gasoline from natural gas, has joined the Riverside-Western Petroleum Co., now erecting a plant in the Glenn Pool, in Oklahoma.

Crude oil production in all the fields in Texas in March averaged 38,889 bbls. per day, and in Louisiana 36,527 bbls. per day.

10 Years Ago

April 19, 1923

California with a production of 725,000 bbls. per day and Oklahoma with 466,000 bbls. per day, have broken their past production records.

The United States Pipe Line Co., pioneer transporter of refined oil by pipe line, has petitioned the State of Pennsylvania for permission to sell a part of its equipment and to dismantle the remainder. The line extends from Titusville north to the Bradford Field and thence to Marcus Hook, Pa. It was organized 30 years ago.

F. Godber, president of the Roxana Petroleum Corp., together with other officials, are looking over sites for a large refinery in Kansas. The choice lies between Wichita and Arkansas City.

The South Penn Oil Co. gets a 21,000,000-foot gas well in Ritchie County, West Virginia, the largest gas well in the East since the opening well of the McKeesport, Pa., Field, drilled by David Foster.

The Turkisk National Assembly ratifies the Chester concession in Mesopotamia, upon which a $100,000,000 valuation is placed by geologists.

NATURAL GASOLINE MANUFACTURE

Refiners in Mid-Continent Reduce Stocks of Natural

Refiners in the Mid-Continent and Gulf Coast areas who purchase their natural gasoline requirements from gasoline plants located in the Mid-Continent used 12.9 per cent less in the first two months of 1933 than during the same period in 1932, according to the Western Petroleum Refiners Association. Those refineries located in Oklahoma, Kansas and inland Texas used practically the same amount this year as a year ago but large reductions were made in the amounts taken by those located along the Gulf Coast. The North Louisiana and Arkansas refiners also reduced their use of natural gasoline by a large percentage but the consumption in this area has always been low compared to other important refining sections.

Despite the lesser use of natural gasoline, stocks at refineries were 28.9 per cent below those of a year ago, at the close of February. This is accounted for in part by the reduction in the receipts of 14.7 per cent.

USE OF NATURAL GASOLINE IN MID-CONTINENT
(Thousands of Gallons)
Used by Local Refiners

	First 2 mo. 1933	First 2 mo. 1932	Pct. change
Okla. and Kans.	30,786	30,282	—1.6
Inland Texas	22,092	21,000	—4.9
Coastal Texas	19,278	17,346	—10.0
N. La. and Ark.	6,048	3,066	—49 2
Coastal La.	5,292	1,008	—81 0
Total	83,496	72,702	—12 9

Local Refinery Demand (Receipts)

Okla. and Kans.	31,290	30,954	—1.1
Inland Texas	22,092	21,210	—4.0
Coastal Texas	21,126	17,304	—18.1
N. La. and Ark.	6,258	3,108	—50.3
Coastal La.	5,460	1,008	—81.5
Total	86,226	73,584	—14 7

Excess Production Over Local Refinery Demand

Okla. and Kans.	43,210	27,546	—36 4
Texas	17,882	15,186	—15.1
La. and Ark.	782	5,384	+588 5
Total	61,974	48,116	—22.4

Stocks at Local Refineries—Close of February

Okla. and Kans.	1,232	1,596	—7.3
Inland Texas	210	378	+80 0
Coastal Texas	13,314	9,156	—81.2
N. La. and Ark.	462	210	—54 5
Coastal La.	252	none	—100 0
Total	15,960	11,340	—28 9

Total United States

Stocks at natural gasoline plants—close of February	36,763	27,342	—25.6
Production at natural gasoline plants	272,600	227,600	—16 5
Shipments from natural gasoline plants	262,907	219,097	—16.7
Stocks at refineries—close of February	110,586	115,080	+4.1
Used by refineries	179,928	168,924	—6.1
Refinery demand (receipts)	199,248	168,588	—15 4
Demand other than refinery receipts:			
Blended at natural gasoline plants	265	550	+107.5
To jobbers, exports, etc.	32,550	29,778	—8.5
Balance, including losses	30,844	20,181	—34 6
Total	63,659	50,509	—20 7

COMPLETING CANADIAN PLANT

CHATHAM, Ontario, Apr. 15.—Work is being pushed as rapidly as possible on the new $250,000 gasoline absorption plant of the Royalite Oil Co. in the Turner Valley Field. The plant was to have been completed in March, but operations were delayed by weather conditions. It is now about 60 per cent complete, and should be in operation early this spring. It will extract gasoline from the residual wet gas of the Royalite and some other wells after the first naphtha recovery has been made by means of separators.

Announce Program for Annual Meeting of the Natural Gasoline Association

The program of the next annual convention of the Natural Gasoline Association of America was announced this week by Ray Miller, secretary, and covers 2½ days of meetings, in the Hotel Tulsa in Tulsa, starting May 15.

Monday morning will be devoted to registration and the members of the Natural Gasoline Supply Men's Association will also meet then to make any final arrangements for the entertainment of those attending the convention. As in previous years, the Supply Men's Association will provide a dance, smoker and dutch lunches at noon. The first of the meetings will be called Monday afternoon by Frank L. Chase, of the Lone Star Gasoline Co., who will deliver the welcoming address. This will be followed by the president's address in which S. S. Smith, of the Shell Petroleum Corp., will discuss the activities of the association for the past year. This will be followed by the appointment of the nominating committee who will recommend names as officers for the coming year.

The various committees of the association will then report on the progress made over the past year and these reports have always proved to be exceptionally valuable, because of the impartial, highly co-operative spirit in which the employes of the various companies worked as committee members. Much of the progress that has been accomplished by the association in regard to standardizing gas contracts, gas testing methods, specifications on finished products, and the standardization of parts of the plant equipment is directly traceable to the work of these standing committees. At times such as the present when economies of operation become a most important item in keeping a plant operating or a company personnel together, these reports are of greater value.

Another feature of the meetings in past years has been the analyses of the economic factors tending to improve or lessen the market for natural gasoline. These have aided manufacturers to plan their operations accordingly and this year a paper will be delivered by E. Buddrus, of the Phillips Petroleum Co., that will deal in detail with the prospects of the Mid-Continent area.

The second day will be devoted to technical papers and an exceptionally attractive program of papers has been prepared. During the day C. W. Briles of the Oklahoma A. and M. College will speak on the relationship between employe and employer in industry and this should find a broad interest because of the strained economic conditions that have forced economies which have removed men from the payrolls, curtailed working hours for those employed and reduced wages and salaries on a major scale. The natural gasoline industry has been particularly hard hit because of

(Continued on Page 39)

PROGRAM
Twelfth Annual Convention
NATURAL GASOLINE ASSOCIATION OF AMERICA
Hotel Tulsa, Tulsa, Okla.
May 15-17, 1933

Monday, May 15, 10 a.m.

10 a.m.—Registration: Mezzanine floor, Hotel Tulsa.
10:30 a.m.—Annual meeting, Natural Gasoline Supply Men's Association.
12 noon—Luncheon: Compliments of the Natural Gasoline Supply Men's Association.

Afternoon Session, 1:30

Welcoming Address, Frank L. Chase, Lone Star Gasoline Co.
President's Address, S. S. Smith, Shell Petroleum Corp.
Appointment of Nominating Committee.
Reports of Active Standing Committees:
Gas Contract Committee, T. R. Goebel, Skelly Oil Co.
Gas Testing Committee, George P. Bunn, Phillips Petroleum Co.
Liquefied Gas Committee, T. W. Legatski, Phillips Petroleum Co.
Specifications Committee, R. E. Baker, Shell Petroleum Corp.
Standardization Committee, H. A. Ells, Empire Oil & Refining Co.
Technical Committee, R. C. Alden, Phillips Petroleum Co.
Sales Managers Committee, S. B. Crooks, Empire Oil & Refining Co.
"Present Production and Future Trend of Mid-Continent Natural Gasoline," E. Buddrus, Phillips Petroleum Co.
9 p.m.—Annual Dance, Topaz Room, Hotel Tulsa: Compliments of the Natural Gasoline Supply Men's Association.

Tuesday, May 16, 9:30 a.m.

"Employe Relations in Industry," C. W. Briles, Oklahoma A. and M. College.
"Comparison of Antiknock Characteristics of Vapor Recovery and Natural Gasoline Blends," H. M. Trimble, Phillips Petroleum Co.
"Study of Raoult's Law of Equilibrium," S. S. Smith, Shell Petroleum Corp., and L. S. Gregory, of Black, Sivalls & Bryson, Inc.
Annual Membership Meeting, Natural Gasoline Association of America—Report of Nominating Committee and Election of Officers and Directors.
Noon—Luncheon: Compliments of the Natural Gasoline Supply Men's Association.

Afternoon Session, 1:30

"Further Consideration of the Disposal of Excess Volatility," Emby Kaye, Skelly Oil Co.
"The Performance of Motor Fuels," Dr. G. G. Brown, University of Michigan.
8 p.m.—Annual Smoker, Topaz Room, Hotel Tulsa: Compliments of the Natural Gasoline Supply Men's Association.

Wednesday, May 17, 9:30 a.m.

"The Present Status of the Vapor Lock Problem," Dr. O. C. Bridgeman, H. S. White and F. B. Gary, Bureau of Standards, Washington, D. C.
Announcement of Election of Officers and Directors.
Unfinished business—papers and discussion.

House Passes Bill Opening Up Gas Wells in Panhandle

AUSTIN, Tex., Apr. 15.—On Thursday of this week the Texas house of representatives passed Senator Clint C. Small's "sour gas" bill, to permit operators in the Texas Panhandle gas field to process gas for the recovery of casinghead gasoline and to burn the residue gas to make carbon black until such time as the pipe line companies buy the gas for use as light and fuel.

Independent gas operators scored in a long fight to get a market, during which they have contended five major pipe line gas exporters were draining their property, while the law forbade any uses to which they could turn their gas except through the pipe lines. If approved by the governor the bill will be effective 90 days after adjournment. It was passed by a vote of 88 to 26.

An amendment by Representative Robert Long, Wichita Falls, to limit the bill's provision for 25 per cent of open flow production to an amount not exceeding that of the nearest well being produced for fuel, was tabled, 83 to 30.

Representatives Long and Greathouse of Fort Worth, attacked the bill; Representative Greathouse contending that it would destroy in a short time the immense natural gas deposits from which five pipe line companies have built lines to Chicago and the East.

Another bill is pending as a companion and is known as the Lotief bill. It has been approved by the committee, and proposes to levy a 1 cent per 1,000 feet tax on natural gas, exempting the first 400,000,000 feet of each producer per quarter. The present tax is 2 per cent, and sale prices range from 2 to 6 cents at the wells.

The bill which has passed would be limited to the Panhandle Field by the provision that it apply to fields of 300,000 acres or more of proven territory. It applies to both "sweet" gas and to gas containing sulphur compounds. Under a previous ruling of Attorney General James V. Allred in which he stated the bill conforms to the public welfare section of the conservation law, the Texas commission has been granting permits as authorized by this bill.

In discussing the effects of the bill if approved, Representative Greathouse said, "It would be criminal to permit, by legislation, the destruction of this great natural resource. It is the entering wedge that will destroy conservation, not only in the Panhandle, but, in all likelihood, in all fields of the State.

"It has been urged that pipe line companies will not purchase the gas, I hold no brief for any of these corporations, but I know they are paying royalties to hundreds of landowners, and these royalties will not last long if the field is turned loose for stripping and carbon black purposes. Moreover, I am reliably informed there is enough carbon black in storage to supply the market for years, and we all know that we've got more crude oil than we need from which to make gasoline.

"This is literally burning the barn to destroy the rat. I know most of the gas is used in other states, but Texas would starve if it could not sell Texas cattle, oil, cotton, etc., in other states."

NATURAL GASOLINE EXPORTS

The total quantity of natural gasoline exported in February was far short of the volume shipped in January, according to the latest report of the Bureau of Mines. In February only 10,396 bbls. were, exported compared with 143,086 bbls. in January.

East Texas Plants Account for Increased Crude Runs

(Continued from Page 18)

REFINERY OPERATIONS IN NORTH CENTRAL TEXAS
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Aver daily runs— Apr.	Mar.
Abilene Refining Co., Abilene	500	100	(*)
Allstate Refining Co., Thrall	3,000	(*)	(*)
American Refining Properties, Wichita Falls	6,000	(*)	(*)
Archer Refining Co., Megargel	1,500	350	400
Atlantic, Pacific & Gulf Refining Co., Wichita Falls	5,000	(*)	(*)
Bobrose Oil & Refineries, Brownwood	2,000	(*)	(*)
Continental Oil Co., Wichita Falls	6,000	4,000	1,200
Dale Oil & Refining Co., Electra	4,000	(*)	(*)
Dixon Creek Oil & Refining Co., Kings Mill	3,500	1,500	900
Empire Oil & Refining Co., Gainesville	5,000	1,700	2,000
Exchange Petroleum Corp., Albany	500	250	250
Falls Refining Co., Wichita Falls	2,000	400	450
Gratex Refining Co., Graham	500	120	120
Gulf Refining Co., Fort Worth	10,000	6,000	6,000
Haskell Oil Refining Co., Breckenridge	200	100	200
Humble Oil & Refining Co., Breckenridge	2,000	(*)	(*)
Humble Oil & Refining Co., Chilton	4,000	(*)	(*)
Humble Oil & Refining Co., Neches	5,000	900	1,650
Iowa Park Producing & Refining Co., Iowa Park	2,500	(*)	(*)
Kent Refining Co., Minerva	2,000	300	300
Kent Refining Co., Angus	4,000	(*)	(*)
LaSalle Petroleum Co., Burkburnett	3,500	170	150
Macmillan Petroleum Co., Isom	8,000	(*)	(*)
Magnolia Petroleum Co., Fort Worth, No. 1	12,000	5,000	4,500
Magnolia Petroleum Co., Fort Worth, No. 2	6,000	(*)	(*)
Magnolia Petroleum Co., Corsicana	5,000	600	2,200
Marathon Oil Co., Fort Worth	5,000	4,000	3,500
Master Petroleum Co., Waco	750	300	....
Moon Refining Co., Graham	300	(*)	50
Muenster Refining Co., Muenster	300	30	(*)
Olney Oil & Refining Co., Olney	2,500	2,000	2,000
Oriental Oil Co., Dallas	5,000	1,800	800
Panhandle Refining Co., Wichita Falls	5,000	4,000	3,000
Petroleum Refractionating Co., Pampa	6,500	3,000	4,000
Pentex Refining Co., Echo	200	30	50
Phillips Petroleum Co., Isom	30,000	19,000	18,000
Phoenix Refining Co., Inc., Dallas	3,000	350	350
Pilot Point Refining Co., Pilot Point	500	100	200
Primrose Refining Co., Wichita Falls	2,500	(*)	(*)
Shamrock Oil Co., Sunray	4,000	300	300
Sinclair Refining Co., Fort Worth	5,000	3,500	3,000
Simms Oil Co., West Dallas	4,500	(*)	(*)
Southland Refining Co., Olney	1,000	120	135
Star Refining & Producing Co., Fort Worth	1,500	700	600
Superior Refining Co., Tiffin	500	(*)	100
Taylor Refining Co., Taylor	6,000	800	800
Taxman Refining Co., Wichita Falls	3,000	(*)	(*)
The Texas Company, Dallas	16,000	11,000	11,000
The Texas Company, Amarillo	4,000	1,500	3,500
Texas Pacific Coal & Oil Co., Fort Worth	5,000	2,500	3,000
Texas Pacific Coal & Oil Co., Caddo	1,000	500	500
Waggoner Refining Co., Electra	6,000	3,000	3,000
Wilcox Oil & Gas Co. (Pampa Refining Co.), Pampa	4,000	(*)	(*)
White Star Refining Co., Cisco	500	150	400
Total	228,650	79,170	77,405

*Shut down.

REFINERY OPERATIONS IN WEST TEXAS
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Aver daily runs— Apr.	Mar.
Bluebonnett Oil Refining Co., Wickett	5,000	(*)	100
Bobrose Oil & Refineries, Luling	2,500	300	300
Coltex Refining Co., Colorado	10,000	5,700	5,000
Concho Refining Co., San Angelo	500	100	50
Cosden Oil Co., Big Spring	15,000	5,000	4,500
Pentex Refining Co., Echo	400	50	50
Grayburg Oil Co., San Antonio	6,000	(*)	500
Great West Refining Co., Big Spring	8,500	(*)	(*)
Gulf Refining Co., Sweetwater	5,000	4,000	4,000
Howard County Refining Co.	2,500	500	500
Humble Oil & Refining Co., San Angelo	5,000	1,000	1,325
Humble Oil & Refining Co., McCamey	15,000	(*)	(*)
Magnolia Petroleum Co., Luling	7,000	3,500	3,500
McNutt Refining Co., El Paso	6,000	500	500
Marathon Oil Co., Del Rio	5,000	(*)	(*)
Mentone Oil & Refining Co., Mentone	300	100	100
Moutray Refining Co., Hawley	500	375	200
Misko Refineries, Inc., Laredo	1,500	1,050	800
Octane Refining Co., Beard	2,000	1,000	1,000
Paramount Refining Co., San Angelo	2,000	450	700
Pasotex Petroleum Co., El Paso	14,000	(*)	6,000
Phoenix Refining Co., Pettus	800	500	500
Phoenix Refining Co., Laredo	600	300	300
Pioneer Oil & Refining Co., Somerset	1,500	1,100	1,000
Richardson Refining Co., Big Spring	6,000	(*)	(*)
Signal Gasoline Co., Texon	500	(*)	(*)
The Texas Company, San Antonio	3,000	1,000	1,000
The Texas Company, El Paso	2,000	1,000	500
Tonkawa Petroleum Co., Pyote	5,000	(*)	(*)
Texas Petroleum Products Co., Somerset	1,500	400	400
West Texas Refining Co., Pecos City	6,000	(*)	(*)
Wickett Petroleum Co., Wickett	2,500	400	800
Total	144,100	28,225	33,785

*Shut down.

REFINERY OPERATIONS IN ARKANSAS
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Aver daily runs— Apr.	Mar.
Berry Asphalt Co., Waterloo	2,000	500	500
Henry H. Cross Co., Smackover	6,000	3,000	3,000
Houston Oil Co., Camden	6,000	(*)	(*)
Kettle Creek Refining Co., Pearson	5,000	(*)	(*)
Lion Oil Refining Co., El Dorado	12,000	6,000	6,000
Macmillan Petroleum Products Co., Norphlet	2,000	1,600	1,600
Ouachita Valley Refining Co., El Dorado	2,000	1,200	1,100
Root Refining Co., El Dorado	10,000	3,300	2,500
Simms Oil Co., Smackover	3,000	2,500	2,500
Union Asphalt Co., El Dorado†	....	....	....
Total	48,000	17,400	17,500

*Shut down. †Reduces residuum purchased from Lion Oil Refining Co., no crude run.

REFINERY OPERATIONS IN NORTH LOUISIANA
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Aver daily runs— Apr.	Mar.
Bayou State Refining Co., Houston	750	(*)	(*)
Cedar Grove Refining Co., Shreveport	750	750	750
Louisiana Oil Refining Co., Shreveport, Bossier	19,000	16,500	18,500
Spartan Refining Co., Shreveport	10,000	5,000	5,500
Stanolind Oil & Gas Co., Superior	3,500	1,500	1,700
The Texas Company, Shreveport	7,000	(*)	(*)
Williams Refining Co., Shreveport	300	200	200
Total	41,000	23,950	26,650

*Shut down.

REFINERY OPERATIONS IN KANSAS
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Aver daily runs— Apr.	Mar.
Altitude Petroleum Corp., Chanute	5,000	800	(†)
Altitude Petroleum Corp., Kansas City, Mo.	3,000	500	500
Barnsdall Refineries, Inc., Wichita	4,000	1,250	1,250
Derby Oil Co., Wichita	7,500	4,000	4,000
Dickey Refining Co., McPherson	5,000	1,200	1,000
Eldorado Refining Co., Eldorado	4,500	2,800	2,700
Globe Refining Co., McPherson	10,000	7,000	5,000
Golden Rule Refining Co., Wichita	1,500	700	500
Kanotex Refining Co., Arkansas City	12,000	5,500	5,000
National Refining Co., Coffeyville	6,500	5,000	5,000
Phillips Petroleum Co., Kansas City	15,000	7,500	7,500
Shell Petroleum Corp., Arkansas City	22,000	8,000	8,000
Sinclair Refining Co., Coffeyville	12,000	9,000	8,500
Sinclair Refining Co., Argentine	9,500	5,000	5,000
Skelly Oil Co., Eldorado	23,000	10,800	11,000
Standard Oil Co. of Kansas, Neodesha	20,000	3,000	3,500
Sunflower Refining Co., Hutchinson	2,000	400	400
Vickers Petroleum Co., Potwin	3,500	2,500	2,500
White Eagle Oil Corp., Augusta	16,000	14,500	14,000
Total	174,000	89,450	85,350

*Shut down. †Operating cracking stills only.

REFINERY OPERATIONS IN EAST TEXAS
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Aver daily runs— Apr.	Mar.
Alamo Refining Co., Camps Switch	2,500	2,300	2,200
Arp Refining Co., Arp	500	950	900
Arrow Refining & Producing Co., Overton	2,500	1,700	1,700
Beacon Oil & Refining Co., Henderson	4,500	3,000	3,500
Canyon Refining Co., Kilgore	200	50	50
Carnation Refining Corp., Gladewater	200	200	150
Central Refining Co., Friars Switch	7,500	3,000	(*)
Chief Refining Co., Gladewater	500	200	(*)
Cook (R. X.), Gladewater	200	120	100
East Texas Refining Co., Longview	10,000	8,000	2,750
Gladetex Refining Co., Gladewater	500	(*)	(*)
Gilliland Refining Co., Gladewater	1,000	800	(*)
Hartfield Refining Co., Kilgore	200	200	(*)
Henderson Refining Co., Henderson	6,000	5,000	(*)
Johnsonville Refining Co., Omega	200	30	30
Kilgore Refining Co., Kilgore	1,500	2,000	2,200
Lake Refining Co., Gladewater	500	200	200
Locke Refining Co., Gladewater	200	200	130
Overton Refining Co., Overton	3,500	2,300	2,400
Panama Refining Co., Kilgore	250	(*)	150
Pennant Refining Co., Kilgore	250	170	150
Petroleum Refractionating Co., Longview	10,000	5,000	(*)
Recla Refining Co., Turnerstown	200	25	25
Reese Refining Co., Arp	200	25	50
Rusk Refining Co., Overton	3,000	1,800	1,000
Sabine Refinery Co., Gladewater	300	190	250
Shoreline Refining Co., Kilgore	300	260	220
Sinclair Refining Co., Camps Switch	5,000	1,800	1,100
Solar Refining Co., Overton	3,000	(*)	300
Southern Oil Refining Co., Reeds Switch	2,500	1,700	1,000
Taylor Refining Co., Tyler	15,000	11,000	12,000
Texas Oil Products Co., Gladewater	1,000	1,100	800
Thrasher Refining Co., Gladewater	300	120	170
Trinity Refining Co., Gladewater	350	300	210
Unit Refining Co., Kilgore	200	60	90
Total	87,150	53,860	33,855

*Shut down.

Wildcat Development on Gulf Coast to Be Active

(Continued from Page 13)

to a narrow strip of wells. An indication of the prolificness of Gulf Coast salt dome fields is given in the following table listing the 10 most productive fields to date:

Field—	Productive acres	Accumulated production	Average yield per acre	Year of disc.
Spindletop	452	120,287,075	266,122	1901
Humble	2,350	115,200,878	49,022	1905
Sour Lake	723	75,717,839	104,008	1902
W. Columbia	455	71,673,019	157,523	1915
Hull	760	70,519,136	92,778	1908
Goose Creek	900	67,312,004	74,680	1906
Vinton	325	38,677,235	119,007	1901
Batson	560	35,842,335	64,004	1903
Orange	300	31,386,881	104,623	1913
Barbers Hill	325	30,752,554	94,623	1916
Total	7,155	657,369,106	91,862	

Although developments of the past year have opened an entirely new type of Gulf Coast play with indications of extensive production and large fields, namely such fields as Conroe and others which may be found along that former virgin strip of territory fringing the salt dome district, it still is believed that salt domes will continue to hold the importance which has been attached to them since the discovery of Spindletop.

Announce Program for Gasoline Convention

(Continued from Page 38)

the need to continue operating the plant in many fields, even though losses are incurred month after month. Doctor Briles' views will be interesting to operators and executives alike.

A subject for a paper of immediate importance to the industry is that of H. M. Trimble, of the Phillips Petroleum Co., in which he will discuss the relative merits of vapor recovery gasoline natural gasoline blends, particularly from the standpoint of their antiknock characteristics. The fact that the market for natural gasoline among the larger refiners has been taken away to a large extent by the light fractions recovered from the cracking still gases will make the comparison of interest economically as well as technically. This paper will be followed by one on the application of Raoult's law over the range of operating conditions in natural gasoline plants. This paper was prepared by S. S. Smith, of the Shell Petroleum Corp., and L. S. Gregory, of Black, Sivalls & Bryson, Inc. It will discuss the deviations found in applying the gas laws to working conditions involving high pressures and stresses the results actually obtained in practice.

In the afternoon session two interesting papers are scheduled. Emby Kaye, of the Skelly Oil Co., will discuss the manufacture and economics involved in disposing of the lighter fractions of natural gasoline and will also include a discussion of the refiners' problem in utilizing similar fractions recovered from cracking still gases. Following this paper, Dr. G. G. Brown, of the University of Michigan, will talk of the general subject of "Motor Fuel Performance" and as his contributions have featured the past meetings of the association, his discussion is awaited with equal interest.

On Wednesday morning, but one paper will be presented, that prepared by Dr. O. C. Bridgeman, H. S. White and F. B. Gary, of the Bureau of Standards, on "The Present Status of the Vapor Lock Problem." Probably no single factor is of as much importance to the natural gasoline industry as the solution of the difficulties encountered in the automobile engine when using gasolines of too high vapor pressure.

Important changes have been made by the motor manufacturers in the design of the "plumbing" and they have insulated the carburetor, etc., and the work going on at the Bureau of Standards is intended to ascertain whether fuels of higher vapor pressure could now be used satisfactorily.

Rapid Advance Made in Perfecting Instruments

(Continued from Page 17)

umn gradient curves. The instrument is unaffected by temperature variations for tests of ordinary duration while for tests covering long periods of time correction may be necessary if extremely accurate results are desired.

A continuous recording instrument, designed and developed by C. E. Reistle, Jr., U. S. Bureau of Mines, Bartlesville, Okla., is shown in Figure 3-B which simultaneously records both subsurface temperature and pressure. This particular feature, as far as is known, is developed in no other instrument. The instrument has been used mostly in connection with research work and its operation combines the general features of operation of the instruments shown in Figures 1-C and 2-B. The pressure bellows is installed to act as a pressure transmitting diaphragm and to separate well fluids from the lubricating oil contained within. Well pressure acting on the bellows transmit through the lubricating oil to the pressure piston which moves upward against the resistance of the coil spring. By means of rods and multiplying mechanism, this movement is carried through the full length of the instrument and finally serves to operate the pressure recording pen located inside of the rotating chart drum. The instrument is provided with a fluid filled temperature bulb and tube for measuring and recording temperature. The tube leads from the bulb to the temperature cylinder and piston. With temperature increase, the fluid in the bulb and tube expands and actuates upon the temperature piston, forcing it upward against the spring resistance of a sylphon bellows. This movement passes through another set of rods and multiplying mechanism and, like the pressure movement, operates a recording pen inside of the chart drum. The chart drum is mounted on bearings and is rotated by means of a small watch. The instrument is 1¾ inches in diameter and approximately 7½ feet long. It has been used in obtaining some of the most valuable subsurface information available at the present time.

Continuous recording subsurface instruments undoubtedly possess a definite advantage over any other of the gauge type instruments, in that a continuous pressure record is invaluable. It is possible with instruments of this type to perform tests and secure data that cannot in any way be obtained with other type instruments. The necessity of clock work and other mechanism may impose a slight disadvantage but this objection is negligible. It is believed that sooner or later all subsurface gauges will be so constructed as to give a continuous record of pressure while in the well.

Continuous Recording and Indicating

An instrument has been developed for measuring bottom hole pressure by the Brown Instrument Co., and shown in Figure 4 which combines the features of continuous recording with direct indication. As previously described, an apparatus of this type requires means for recording pressure at the surface. The instrument is electrical and requires a 110-volt alternating current for its operation. The basic principles of design and construction have been used for many years in the construction of remote pressure recorders for industrial use. The apparatus is primarily designed for permanent installation in a well, in that a portion of the mechanism is fastened integrally to the bottom of the tubing string. A three-conductor electric cable is run simultaneously with the tubing string and connects this subsurface portion of the instrument to the recording means at the surface.

The chief disadvantage in this type of apparatus lies in the fact that it is a permanent installation and that it cannot be used to test any well other than the one in which it is installed. The complete instrument is rather costly and, furthermore, the alternating current necessary for its operation is not always readily obtained in the field. Several other disadvantages are obvious. However, the apparatus has several commendable features and it is entirely possible that, with the progress of subsurface pressure work, instruments of this type may some day be used extensively.

Auxiliary Equipment and Test Procedure

Because of the severe service to which they are subjected, subsurface instruments require more frequent calibration than surface instruments. Moreover, rather high pressures are frequently encountered at the bottom of wells and if accurate results are to be obtained the operator must at all times know precisely the calibration constants of his instrument; therefore he should always have easy access to some type of calibration tester.

Two types of testers are commonly used in determining the calibration constants of pressure gauges, the deadweight tester and the fluid pressure scale tester. Both of these instruments are well known standard equipment and need no description.

From the foregoing discussions it will be observed that most subsurface instruments in common use are of the gauge type and, therefore, need only a lubricator and stuffing box for placing the instrument into the well under pressure and a wire line and a reel for running the instrument into the well. The wire line ordinarily used is the Halliburton well sounding device. The Halliburton line is a piece of equipment so standard in the oil fields that it needs but little description. As much as 10,000 feet of steel wire line, .006 inch in diameter, can be wound on the reel. The apparatus is provided with means for measuring the wire as it spools off the reel and is used to read directly the depth to which an instrument has been lowered in a well. The Halliburton line is usually mounted on a car as shown in Figure 7. The reel is belted to a pulley attached to the rear wheel, thus providing mechanical power for rewinding and pulling the instrument to the surface after a test has been completed. The bracket or support by which the reel is fastened to the car must be made strong and rigid in order to withstand the severe stresses to which it is subjected. The driving wheel, usually the left rear, is jacked up and the axle placed on a substantial timber support in such manner as to eliminate all possibility of the car shifting or coming off the support while pulling the instrument from the well. Proper tension in the belt may be secured by a simple idler arrangement or by increasing the belt centers by jacking up the chassis of the car. The idler is more desirable as it furnishes better means for controlling the pulling out operation.

The lubricator and stuffing box hookup is very simple and yet this equipment is very important and should at all times be maintained in perfect condition and working order, in as much as its failure on a high pressure well might prove disastrous. The lubricator itself may be made from a short length of 2, 2½ or 3-inch seamless steel tubing. If 2-inch tubing is used it is well to provide means for guying or supporting the lubricator staff as otherwise heavy pulls are liable to result in its failure. On top of the lubricator is screwed the stuffing box which in turn is provided with a sheave over which the wire line passes.

No general discussion of the manner of operating and obtaining subsurface pressures with instruments of the apparatus type is possible because each instrument requires special technique, depending upon its mechanical construction and design. Likewise, the general procedure of lubricating gauge type instruments into wells has become a common practice in modern production work and does not require detailed description. However, testing wells, especially those of very high pressure, is rather hazardous work and many precautions must be observed to avoid losing the instrument or causing damage to the wells. Subsurface gauges are costly and if lost in a well are not easily replaced. For this reason, the operating personnel should be composed of men well versed in modern production practice and experienced in the handling of all types of wells. Furthermore, they should be men of technical ability and capable of carrying out tests of research. They should be able to interpret and analyze test results if maximum benefit is to be derived from the work.

Acknowledgment is made to those companies and individuals who contributed the necessary data to make this article possible. Acknowledgment is also made to Don Blair, Barnsdall Oil Co., for his careful efforts in making the sketches which supplement this discussion.

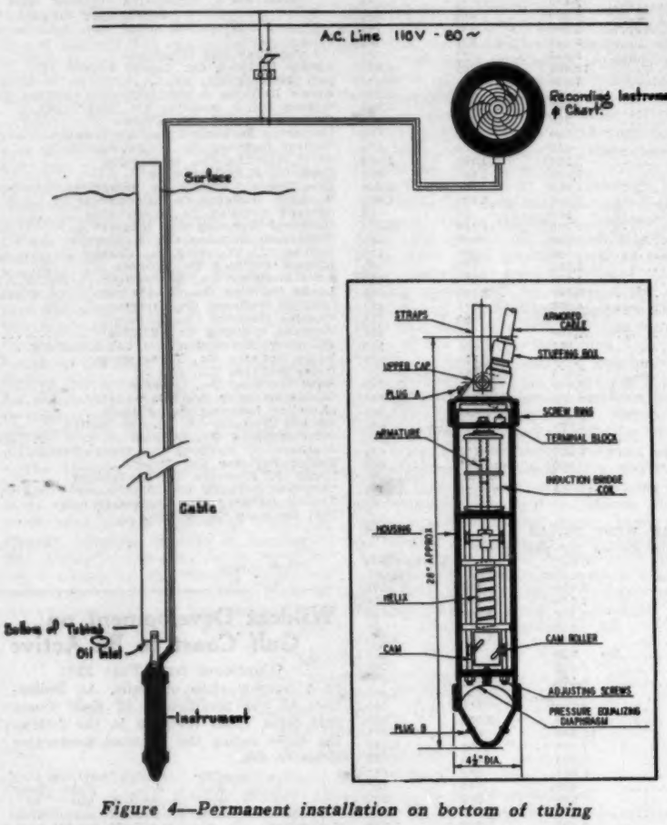


Figure 4—Permanent installation on bottom of tubing

Refined Market Is More Firm on Eastern Coast

(Continued from Page 36)

port that the market is extremely strong, with relatively little oil offering.

Imports of bunker oil are being sharply curtailed.

Kerosene

Tank car volume was holding up fairly well, but price competition was becoming more of a factor in last week's kerosene market, and the undertone was less steady. Sellers continued to post 5¼ cents per gallon for 41-43 water white in tank car lots at refineries or terminals, but a quarter cent cut in the posted figure would not come as a surprise.

Aside from the 1-cent per gallon reduction made in Manhattan early in the week, the tank wagon kerosene situation remained steady. Gallonage was reported holding up well throughout the territory.

Diesel Oil

A steady undertone featured the market during the past week, with refiners continuing to post $1.65 per barrel, f.o.b. terminals. Most of the week's movement consisted of contract deliveries.

For shore deliveries, refiners continued to post 26-30 gravity Diesel oil at 4 cents per gallon in tank car lots, f.o.b.

Gas Oil

Contract withdrawals of gas oil were showing a slight falling off last week, but the market remained unchanged at 4 cents per gallon for 28 gravity minimum oil in tank car lots.

Paraffin Wax

A better feeling was in evidence in the market for fully refined wax last week, and on 120-122 a.m.p. sellers advanced their quotation to 2⅝ cents per pound, an advance of one-eight cent for the week. Other grades remained unchanged, but sellers were showing firm views on the market and were not inclined to submit counter offers against bids made at prices substantially under posted levels.

Furnace Oils

Refiners are still withholding contract prices for the 1933-34 heating season, pending further developments in the crude oil situation, with general sentiment indicating that prices for next season will be on a par with, or higher than, the current level of 5 cents a gallon for 36-40 gravity oil, 4 cents for 33-36 gravity, and 3½ cents for 21 gravity.

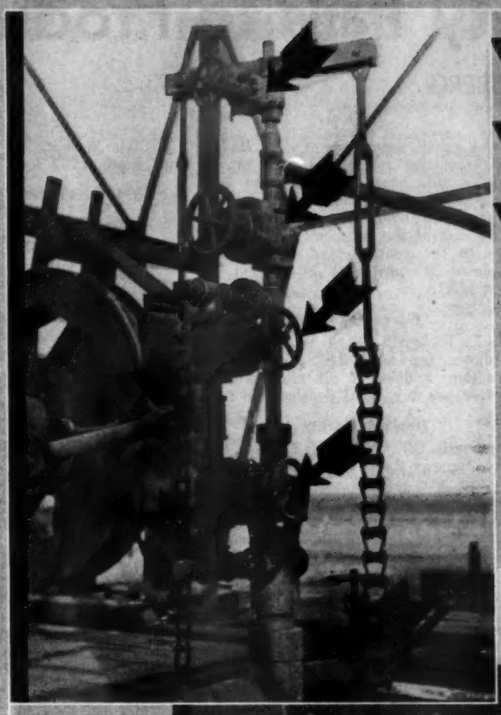
Lubs

Cylinder oils again yielded to pressure during the past week, and the market sold off all along the line. Revised quotations, all for oil in barrels, f.a.s. New York harbor, were as follows: 600 Warren E, 17 cents per gallon; 600 S.R. unfiltered, 13 cents; 650 S.R. unfiltered, 15½ cents per gallon, reductions of one-half cent in each instance; 600 flash S.R., 16¼ cents, a reduction of three-quarters cent per gallon; 630 flash S.R., 1 cent lower at 21 cents. Bright stocks remained unchanged.

ATLANTIC REFINING REPORT

PHILADELPHIA, Pa., Apr. 17.—The Atlantic Refining Co. and subsidiary concerns report a loss of $3,127,000 for the first quarter of 1933, after deducting an inventory adjustment of $1,879,000.

This compares with a profit of $435,000 for the corresponding quarter of last year, during which $555,000 was deducted as an inventory adjustment. Both figures are after allowances for depreciation and other charges.



AT THE WELL
IN THE FIELD
AT THE TANKS

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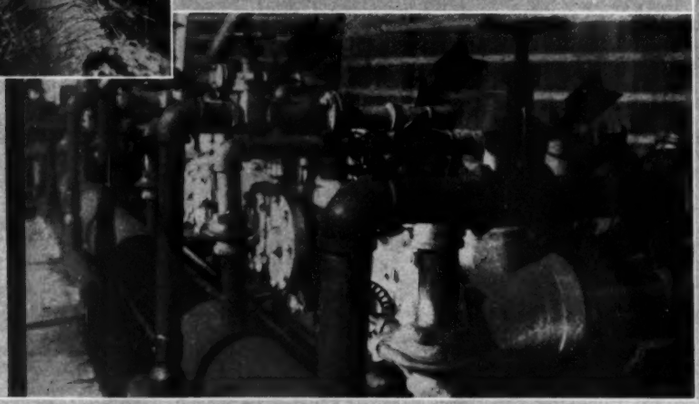


Ector County Test Thought Sure to Make Well; Test in Crockett County Fails to Produce

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Apr. 17.—Stanolind Oil & Gas Co.'s No. 1 Cowden, in Section 26, Block 43, Township 2s, T.&P. Survey, north offset to the Addis discovery well, Ector County, is coring at 4,005 feet. The hole is now loaded, and after coring another 5 feet it will be unloaded and a test made. The most saturation shown was between 3,920 and 3,935 feet. It is considered sure to make a producer and will make the second for this area.

The same company's No. 1 Todd in Section 67, Block UV, G.C.&S.F. Survey, Crockett County, is expected to be abandoned without trying a shot. It failed to make production after being treated with acid at 7,720 feet. It was drilled to 8,041 feet before plugging back.

Superior Oil Co., which owns considerable acreage in the vicinity of the unit block of the Stanolind Oil & Gas Co. and others in Block UV, has a rig up on location in Section 26 of the same block and survey and will drill its first of a series of shallow tests on the Robert Massie ranch. These tests will serve to perpetuate leases on its block and give geological data that will serve as a guide in locating an Ordovician test which it is expected to drill later. Eppanauer Drilling Co. of San Angelo has contracted to do the drilling. The company has 14,000 acres in its block which is approximately 4 miles east of the deep test on the Todd ranch.

Continental Oil Co. is to drill another shallow test on its block of acreage northwest of the Todd Ordovician test. This well will be carried as No. 1-A-25, and will be located in Section 25, Block WX, approximately 2½ miles northwest of the unit wildcat in Section 67. It will also be approximately one-quarter of a mile from the nearest shallow producer in this area.

Runnels County

B. C. Mann of San Angelo, Steve Currie of Garden City and others have moved in a machine on the T. B. Wade ranch in Block 10, Norvell Travis Survey No. 533 on the northwest edge of the McMillan Pool, Runnels County, approximately 1,600 feet north and slightly west of Golden Petroleum Co.'s No. 1 McMillan producer. This will be the first test drilled in this area since the last named producer was completed in July of 1932.

Taylor-Link Pool

The Taylor-Link Pool, Pecos County, approximately 16 miles west of the Yates Pool, is having the first activity in over a year. A. & M. Petroleum Co. of El Paso has set and cemented surface pipe at 400 feet in its No. 1 University, Section 31, Block 16. Acreage for this test was procured from Skelly Oil Co., which formerly drilled two producers along the west line of the north half of the southeast quarter. This new test is 1,650 feet from the south and 330 feet from the east line of the section. This pool was discovered in June, 1929, and was drilled up within the next few months, never making a field of major importance. Daily production of the field is now 630 bbls. from 56 wells.

Renaud and Prettyman's No. 2 University in the center of the SW of Section 8, Block 16, will probably be plugged as it encountered and filled with water at 2,995 feet, although at present drilling below 3,085 feet. The test is 2 miles southwest of the same owners' No. 1 University, a producer drilled last year extending the Edwards and O'Brien area, which is under lease and production by Gulf Production Co.

At a proration hearing held at Midland on April 12, Weekly Oil Corp. of Fort Worth asked for an increase in the allowable in the Crane-Upton areas. R. D. Parker, chief of the oil and gas division of the Railroad Commission, stated that the market demand did not warrant increasing the allowable in this area at present. The allowable production set by the commission on April 6 is 12,000 bbls.

Several operators at the meeting asked that tests be made to check potentials in the area, but other operators said market demand was too low to warrant the expense of retaking the potential. Both matters were deferred.

RANGER AND WICHITA FALLS

Stanolind Crude Oil Purchasing Co. has sold 30 steel tanks, the majority of which are 55,000-bbl. capacity, in the Northwest Field, Wichita County, and at Devol, Okla. They are being dismantled and moved to East Texas and other points in Oklahoma.

There were 10 locations staked in the Ranger district and 20 locations in the Wichita Falls district during the week. Activities are being maintained at about the same level, as during the past few months. The majority of the tests are for shallow drilling.

PANHANDLE

Texalvania Oil Co.'s No. 1 Haile in Section 16, Block L, E.L.R.R. Survey, in the south extension of the Badger Pool, was the interesting well of the week in this area, extending the dolomite production by a mile and a half to the northwest, being approximately a mile to the east of the Alexander well and 3 miles to the southeast of the recently completed Murphy well in Section 13, Block M-21.

Garza County

M. L. Richard's No. 1 W. E. Connell and Sons, top sand 2,828 feet, initial production 4 bbls. of oil and 15 bbls. of water per day, total depth 2,948 feet.

Howard County

Plymouth Oil Co.'s No. 7 Kloh and others, top pay 2,404 feet, initial production 205 bbls. of oil and 115 bbls. of water, total depth 2,599 feet. Southern Oil Corp.'s No. 1 W. P. Williams, dry and abandoned, total depth 3,004 feet.

Ward County

Eppenauer Drilling Co.'s No. 1 T. H. Purcell, top pay 2,579 feet, initial production 10 bbls. of oil, total depth 2,740 feet. Buck Sturm and Simms Petroleum Co.'s No. 3 R. H. Gill, top pay 2,501 feet, initial production 105 bbls. flowing through 2-inch tubing, total depth 2,616 feet. Buck Sturm and others' No. 4 R. H. Gill, top pay 2,500 feet, initial production 252 bbls. through casing, total depth 2,591 feet.

Reeves County

J. E. Cunningham and others' No. 1 William Wright, dry and abandoned, total depth 3,767 feet.

COMPLETIONS IN PANHANDLE DISTRICT

Gray County

Baldridge Oil Co.'s No. 1 Melton, shot with 180 quarts from 3,160-3,216 feet, initial production 20 bbls., total depth 3,225 feet. Cosmos Oil Co.'s No. 1 Catlin, shot with 240 quarts from 3,052-3,171 feet, initial production 360 bbls. pumping, total depth 3,171 feet. G. S. Travis' No. 1 Back, dry and abandoned, total depth 2,830 feet.

Oriskany Sand Gasser in Allegany County, N. Y.

CORNING, N. Y., Apr. 15.—Unnamed parties opened a 3,000,000-foot gas production in a test south of Fillmore, Allegany County, said to have been drilled to the Oriskany sand, topped at 2,973 feet. It is the first Oriskany sand gas well in the county.

Near Cameron, in Steuben County, unnamed parties drilling on the north flank of the Alpine anticline found a second gas sand which produced at the rate of 730,000 feet per day. The first gas showing was about 400,000 feet per day.

Wildcat Operations in West Texas

Week Ending April 17

BREWSTER COUNTY

Company, well, farm name, section and block—	Remarks
Joiner's No. 1 McIntire, 853 ft. from S and 2,390 ft. from E, Sec. 31, Blk. 353, W. J. Mitchell Sur.	Drlg. 620 ft.

CONCHO COUNTY

Beasley et al's No. 1 Waring Estate, 400 ft. from N and E. Sec. 162, T.&N.O. Sur.	T.D. 2,586 ft.; pumping 8 bbls. oil per day and some water.

CROCKETT COUNTY

Stanolind Oil & Gas Co. et al's No. 1 Todd, 1,370 ft. from N and 1,330 ft. from E. Sec. 67, Blk. UV, G.C.&S.F. Sur.	Fishing for swab; T.D. 8,041 ft.
Superior Oil Co.'s No. 1 R. Massie, 2,640 ft. W of NW cor. of Sec. 14, G.C.&S.F. Sur., Blk UV, and located in Sec. 26	Rig up.

CULBERSON COUNTY

Miller Bros.' No. 1 fee, 1,980 ft. from N line and 660 ft. from E line of Sec. 61, Blk. 97, P.S.L. Sur.	Drlg. 520 ft.

DAWSON COUNTY

Ray Albaugh et al's No. 1 John Robinson, 1,320 ft. from N and W, Sec. 46, Blk. M, E.L.&R.R. Sur.	T.D. 330 ft.

ECTOR COUNTY

Cherry et al's No. 1 Johnson, 1,320 ft. from S line and 660 ft. from E line of Sec. 41, Blk. 43, Twp. 1s, T.&P. Sur.	T.D. 1,530 ft.
L. C. Harrison et al's No. 1 Addis, 330 ft. from N and 1,320 ft. from W. Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur.	Flowing average of 275 bbls. oil per day to tanks; T.D. 4,061 ft.
Landreth Prod. and The Texas Company's No. 1 Holt, 660 ft. from S line and 2,025 ft. from E line of Sec. 16, Blk. 43, Twp. 1s, T.&P. Sur.	Drlg. 1,075 ft.
Stanolind O. & G. Co.'s No. 1 Cowden, 330 ft. from S and 1,320 ft. from W. Sec. 26, Blk. 43, Twp. 2s, T.&P. Sur.	Casing 4,002 ft.
Thomas et al's No. 1 Edwards, 330 ft. from S, 2,310 ft. from E. Sec. 38, Blk. 43, Twp. 2s, T.&P. Sur.	Set casing at 3,327 ft.
Fred Turner's No. 1-A Addis, 1,650 ft. from N line and 2,300 ft. from E line of Sec. 35, Blk. 45, Twp. 2s, T.&P. Sur.	Rigging up cable tools.

FISHER COUNTY

Cranfill & Reynolds' No. 3 George, 330 ft. from N and W lines of NE of Sec. 200, Blk. 1, B.B.B.&C. Sur.	Drlg. 1,155 ft.
O'Donnell's No. 1 Pardue, 330 ft. from S and E lines of N half of SW Sec. 203, B.B.B.&C. Sur.	Swabbed 110 bbls. oil in 24 hrs.; plugging back with lead wool to 3,118 ft.; T.D. 3,125 ft.
Southern Oil Co.'s No. 1 Beavers, 330 ft. from W and 660 ft. from S of S half of SW Sec. 193, B.B.B.&C. Sur.	S.D. 450 ft.

GARZA COUNTY

P.H.E. Oil Co.'s No. 1 Stoker	T.D. 2,909 ft.

GLASSCOCK COUNTY

R. T. Helms' No. 1 Hilger, 330 ft. from N line and 330 ft. from E line of Sec. 15, Blk. 34, Twp. 3s; T.&P. Sur.	Drlg. 550 ft.
Humble Oil & Refining Co.'s No. 1 Washer, 330 ft. from N line and 330 ft. from E line of Section 20, Blk. 33, Twp. 2s, T.&P. Sur.	Drlg. 858 ft.

(Continued on Page 45)

ROCKY MOUNTAIN RUNS

Average daily pipe line runs from fields in the Rocky Mountain territory for the week ending April 15 follow:

	Bbls.
WYOMING	
Salt Creek	19,680
Big Muddy	1,920
Badger Basin	50
Byron Garland	130
Dallas-Derby	490
Dutton Creek	70
Elk Basin	570
Ferris	20
Frannie	240
Grass Creek	1,700
Greybull	10
Hamilton Dome	700
Hudson	490
La Barge	1,050
Lance Creek	130
Lost Soldier	1,380
Midway	90
Oregon Basin	220
Osage	910
Pilot Butte	30
Rock River	1,500
Poison Spider	120
Teapot	20
Total Wyoming	31,420
MONTANA	
Buckley-Border	330
Cat Creek	650
Cut Bank	340
Dry Creek	40
Kevin-Sunburst	2,630
Lake Basin	60
Pondera	1,020
Total Montana	5,070
COLORADO	
Florence	250
Fort Collins and Wellington	630
Iles Dome	500
Moffat	690
Orchard	170
Rangely	50
Tow Creek	260
Total Colorado	2,550
NEW MEXICO	
Artesia	455
Caprock	992
Hogback	245
Jal	1,411
Table Mesa	90
Eunice	460
Hobbs	29,010
Lea	2,445
Texas-Pacific	95
Rattlesnake	680
Total New Mexico	35,883
Total Rocky Mountain area	74,923
Total previous week	75,806
Difference	883

East Texas Tests Completed; New Order Friday; Many Violations During the Shut In Period

By L. E. BREDBERG

DALLAS, Tex., Apr. 17.—The Railroad Commission has completed its potential taking tests in the East Texas fields and the new proration order is to be drawn and presented and the field opened to limited production by April 21. The completed test showed the wells averaged 571 bbls. per hour. The highest flow was 1,021 bbls. per hour and the lowest was 68½ bbls. per hour. On April 11 the first day tests were conducted, only 33 wells were tested. The well making the highest average during that test produced a total of 1,952 bbls. in the two hours allotted. The low well for the day made only 270 bbls., a great contrast to the highest producer.

On April 12, 53 wells were tested. The highest of the day made 1,747.36 bbls. during the two hours, and the lowest 292 bbls. On the third day, April 13, only 41 wells were tested. The highest made 1,037.25 bbls. in two hours and the lowest 137.16 bbls. The highest flowed through three 4-inch lines, while the latter flowed through one 3-inch line and one 4-inch line. It was located on the extreme southeastern edge of the field near the gas area border. Another interesting thing about this low producer was that it flowed 112.8 bbls. the first hour and fell off to 25.8 bbls. the second hour. If it had been allowed to flow another hour on the test it would have failed to produce without pumping. No doubt many other wells in the field would react the same way even if the 10,000 wells were allowed to produce wide open for even one hour's time.

On April 14 only 26 wells were tested, the highest producer of that day flowing 1,865.44 bbls. in two hours. This well is in the high-pressure area of the Castleberry Survey in the north half of Gregg County. Hunt Production Co.'s No. 2-A Vincent in the Penny Survey, Rusk County, made only 252.5 bbls. on test the same day. On April 15 some 40 wells were tested. The highest producer, located in the Ruddle and Chism Surveys, Rusk County, made 1,875.67 bbls. and the low well made only 203.5 bbls. This well is in the Pineda Survey in Upshur County, on the extreme northwestern side of the field.

The average for the first 240 wells tested was 515 bbls., which would make the average producer in the field good for 12,360 bbls. Multiplying this by 10,000 would bring the daily potential of the field to 123,600,000 bbls. There is no doubt at all but that this would be a wholly distorted picture of the field.

All key wells were instructed to have the same size tubing, flow lines, and number of flow lines, but these orders were not carried out, consequently there was a discrepancy in the tests due to the difference in equipment on the wells. Casing in the wells is supposed to be 7-inch and tubing 2½-inch, according to Railroad Commission specifications.

Shutdown Violations

Many of the leases were reported to have been running all the oil they could move. Captain Stanley, in charge of the personnel of the commission working in the field, stated that more men were needed for making the tests, that the 40 men in the field were not sufficient.

Railroad Commission figures show much oil taken out of storage during the shutdown, and but small amounts of oil being moved by tank cars, but other and more reliable figures show far greater shipments by tank cars. Reports on tank car shipments were: April 11, 370 cars; April 12, 336 cars; April 13, 400 cars; April 14, 221 cars; April 15, 395 cars; April 16, 600 cars; April 17, 454 cars. Some of these cars contained refined products, but most carried crude oil.

Marginal Well Cut

One mitigating factor in the future proration of East Texas will be the decreasing of the marginal well allowable from 40 to 20 bbls. A two-thirds majority in the house passed the Walker bill cutting the marginal well allowable, but the outcome on this bill will not be known until the senate considers it. If it passes both houses it will curtail production of around 300 pumpers in the field to 6,000 bbls. per day as these wells are within the 20-bbl. limit, or within the "from 2,000 to 4,000 feet in depth" range. Such curtailment of pumping wells will also pacify many of the producers in the field who have felt that flowing wells, or wells of greater potential, should receive as great or greater allowable than pumping wells. Heretofore pumping wells have had the edge over flowing wells.

Completions and Locations

During the week only 19 wells were completed and only 13 locations were staked. These are both new "lows." Three wildcats were given up as dry holes, and two other wildcat locations were abandoned. Only one wildcat location was staked during the week. This will be put down by R. L. Peveto and Fred Prince on the W. H. Crawford lease in the I. P. Stern Survey, 1 mile south of Talco in Titus County. Another test is to be drilled in this area by these operators regardless of the outcome of the present test. The acreage was obtained from the Gulf Production Co. Humble Oil & Refining Co. holds a large block in the area, and other companies and independents have been procuring considerable acreage in the vicinity of the Gulf block, on a trend extending from west to east along a faulted zone.

Carraras and Edwards' No. 1 Williams, in the southwest corner of the Jesse Crawford Survey, approximately 2 miles southeast of the Browne gas well at the extreme south end of the Rusk County gas area, is about ready to spud. This will be an exceptionally interesting test due to its location. A location has been made to the southwest of the gas producing area, and another short extension will be made to the gas area if a test on the Arnold farm in the Levi N. Sparks Survey makes a gas producer.

Pipe Line Construction

Sinclair Prairie Pipe Line Co. has let contract to Meadows and Whittaker of Burkburnett, Tex., and Truman and Smith of Eldorado, Kans., for the construction of approximately 150 miles of 12-inch line which it will lay between Colonels station near Mexia and Huffman station north of Houston. This line will parallel a looped 8-inch now in operation and will raise the company's East Texas outlet to around 90,000 bbls. Stanolind Pipe Line Co. is now carrying 25,000 bbls. per day under contract which will expire September 1.

Sinclair Refining Co. is constructing seven 93,000-bbl. butt-welded steel storage tanks at its Houston terminal. These are the first butt-welded tanks of such size to be constructed, the butt weld method adding the 3,000 additional barrels to the 90,000s. More steel storage is being erected throughout the East Texas Field, smaller companies doing this construction. More gathering lines are also being laid throughout the field.

United Gas Public Service Co. will soon have 15 miles of 10-inch welded gas line laid from the Pure Oil Co.'s gasoline plant in the Van Field, Van Zandt County, to connect with its main line near Mineola. The main line connects the gas fields of Louisiana and East Texas to industrial plants in Fort Worth and Dallas, and towns along the right of way.

COMPLETIONS IN EAST TEXAS

South Gregg County

Cargill and Dudley's No. 5 England, top sand 3,522 feet, initial production 25 bbls. in one-quarter hour through open tubing, total depth 3,572 feet. H. A. McComas' No. 1 J. S. and F. Elder, top sand 3,535 feet, abandoned, would not flow, total depth 3,598 feet, Mary Van Winkle Survey. Gulf Production Co.'s No. 16 W. Holt, top sand 3,583 feet, initial production estimated at 75 bbls. per hour through three-quarters inch tubing choke, total depth 3,598 feet. McWhorter, receiver's, No. 2 N. Jobe, top sand 3,551 feet, initial production 85 bbls. per hour through open tubing, total depth 3,621 feet. J. C. Means' No. 4 W. P. Luce, top sand 3,544 feet, initial production 80 bbls. per hour through open tubing, total depth 3,561 feet. Mid-Field Oil Co.'s No. 1 L. Martin, top sand 3,756 feet, initial production 75 bbls. per

East Texas Association Wires Protest Against Continued Overproduction

FORT WORTH, Tex., Apr. 17.—E. W. Priddy, secretary of the East Texas Producers & Royalty Owners Association, has signed a "hot" wire dictated by that organization and sent to state legislators and the press. The wire states that the shutdown of the East Texas Field is not being observed by all the operators but that some of the old violators are still producing their wells and shipping out oil. It also condemns the commission and its employes very vehemently and urges the creation of a new oil and gas conservation commission. The wire reads as follows:

"Members of the East Texas Producers and Royalty Owners Association, representing about 1,000 independent producers and royalty owners with headquarters at Tyler, have taken a leading part to create a new commission.

"Our members are on the ground and know the real conditions existing in the producing area and have witnessed the failure of the present Railroad Commission to successfully administer the conservation laws.

"The people of Texas have not been made to realize the devastating loss resulting from chaotic conditions. We have been moved to action by seeing hundreds of thousands of barrels illegally produced oil moved from the field and yet reading statements put out by representatives of the Railroad Commission that the situation was well in hand. Recently over 850 tank cars per day have been moved by rail alone although the commission has given out the statement that the field is practically 100 per cent shut down. The tank car movement for the past five days has averaged 420 cars containing 89,953 bbls. per day. Well-known violators are still producing large quantities of oil and so many of the commission employes have been withdrawn from the field and carried to Austin and elsewhere for lobbying purposes that there are now insufficient men remaining in the field to check violations reported and furnish the attorney general the commission's employes' affidavit necessary for him to take action.

"Crude oil is an exhaustible natural resource and should be conserved as much as possible. The oil business is now Texas' largest industry (with the exception of agriculture). None of the present commissioners has had any training or experience. There is no sound reason why this great industry should be tacked on railroads which might have an adverse interest. The commissioners have their hands full to properly administer the railroads and motor transportation. The proposed bill does not change their salaries or term of office. Why should the present commissioners so persistently object to creating a new commission which would be selfsustaining and probably add millions of dollars to much needed school and state revenue?

"Should the new commission be created it would doubtless retain all needed honest, qualified and experienced employes now being used by the present commission and would doubtless dismiss many employed purely for political reasons who are not in any respect qualified by educational training or experience.

"The failure of the present commission to issue valid orders has resulted in the loss of confidence for the commission and has created disrespect for the law. The large movement of illegally produced oil during the past month has resulted in the railroads and ports becoming blocked and the many wells that have been producing large quantities of oil reaching very low pressures.

"The shutdown order of the commission now in effect will permit the violators to dispose of their illegally produced oil at better prices and will result in an equalization of underground storage and pressures which will mean thousands of additional dollars for the violators at the expense of the law-abiding citizens who have been observing conservation laws and obeying the orders of the commission.

"In behalf of the law-abiding citizens of the State and of the large number of independent operators, landowners and royalty owners we represent, we ask our legislators to help correct the bad conditions by giving us a special conservation commission composed of men of experience and ability who would help us save our crude oil supply and prevent it being wasted. When the present supply is exhausted we know of no possible means of creating more."

hour through three-quarters inch tubing choke, total depth 3,763 feet.

North Gregg County

Gulf Production Co.'s No. 15 S. C. Fishburn, top sand 3,511 feet, initial production 100 bbls. per hour through open tubing, total depth 3,541 feet. Humble Oil & Refining Co.'s No. 13 T. M. Armstrong, top sand 3,544 feet, initial production estimated at 75 bbls. per hour through three-quarters inch tubing choke, total depth 3,578 feet. Manzell and others' No. 2 Walker, top sand 3,605 feet, initial production estimated 40 bbls. in one-quarter hour through open tubing, total depth 3,617 feet. Rajo Oil Co.'s No. 2 Barrett, top sand 3,593 feet, initial production 100 bbls. per hour through open tubing, total depth 3,615 feet.

North Rusk County

Darby Petroleum Co.'s No. 9-B C. O. Christian, top sand 3,721 feet, initial production 75 bbls. per hour through three-quarters inch tubing choke, total depth 3,745 feet. Humble Oil & Refining Co.'s No. 72 L. D. Crim, top sand 3,675 feet, initial production 90 bbls. per hour through three-quarters inch tubing choke, total depth 3,703 feet. Culvey and Gray's No. 2 Brightwell, top sand 3,625 feet, initial production 35 bbls. per hour through three-quarters inch tubing choke, total depth 3,630 feet.

South Rusk County

Hunt Production Co.'s No. 6 Ashby, top sand 3,532 feet, initial production 10 bbls. per hour pumping, total depth 3,620 feet. Jackson-Wise and Snowden's No. 4 J. H. Stewart, top sand 3,778 feet, initial production 50 bbls. in 20 minutes through open tubing, total depth 3,781 feet. Kirby Petroleum Co.'s No. 5 Joe Williams, top sand 3,616 feet, initial production 200 bbls. per hour through open tubing, total depth 3,740 feet. Mid-Kansas Oil & Gas Co.'s No. 38 W. T. Grissom, top sand 3,686 feet, initial production 25 bbls. in one-quarter hour through open tubing, total depth 3,594 feet; No. 13 M. A. Price, top sand 3,581 feet, initial production 20 bbls. in one-quarter hour through open tubing, total depth 3,641 feet. E. L. Pinkston's No. 1 L. J. Pinkston, top sand 3,765 feet, initial production 60 bbls. in one-half hour through open tubing, total depth 3,810 feet.

WILDCAT COMPLETIONS

Anderson County

W. L. Tarkington and others' No. 1-A J. C. Beark, top sand 1,453 feet, base 1,488 feet, elevation 442 feet, dry and abandoned, total depth 1,562 feet, John Trimmer Survey.

Cherokee County

Barkley-Tate and others' No. 1 H. E. O'Neal, location abandoned.

Hopkins County

Hager and Ashby's No. 1 H. Smith, top Pecan Gap 1,500 feet, base 1,630 feet, base Austin chalk 2,720 feet, top red beds 3,205 feet, top sand 3,619 feet, top Georgetown lime 2,783 feet, elevation 434 feet, dry and abandoned, total depth 3,787 feet, J. A. Croft Survey.

Hunt County

Johnson and Russell and others' No. 1 N. A. Gregory, dry and abandoned, total depth 4,038 feet, William Glass Survey.

Van Zandt County

C. H. Everett and others' No. 1 J. J. Goode, location abandoned. Killum and Chisum's No. 1 J. J. Goode, location abandoned.

CITIES SERVICE REPORT

NEW YORK, Apr. 17.—The Cities Service Co. in its twenty-third annual report to stockholders today reported consolidated net earnings of $60,951,583, which while less than the $63,106,882 earned in 1931, were sufficient to pay all taxes, interest, amortization of debt discount and to make provision for depreciation and depletion.

Chicago Marketers Hopeful of Increased Gasoline Sales

(Continued from Page 37)

of reductions in the tank wagon markets in the Chicago district. The Stoddard cleaner tank wagon market was reduced in the metropolitan area to 13 cents from 15.2 cents. A similar reduction was made in the light cleaner tank wagon market a week earlier. In Milwaukee the Stoddard tank wagon market was advanced a cent after a long siege of price cutting. An occasional car of these materials and the paint naphthas is offered at a price considerably below the ruling tank car markets, but these sales are not representative and are influenced by special conditions.

Kerosene Tank Car Markets

The kerosene tank car markets reflect the strong statistical position of this material and the increasing demand for farm use. Monday's prices show the second eighth of a cent advance in the 41-42 and 42-44 water white kerosenes in two weeks. The 41-43 material is ruling at 2½ to 2⅝ cents, and the 42-44 kerosene is at 2⅝ to 2¾ cents. The strengthening factors for kerosene are likewise holding good for prime white distillates which are giving a better account of themselves than the straw materials.

Distillates and Residual Oils

With the exception of the 38-40 prime white distillate, the burning and heavy fuel oils are beginning to show the effects of approaching warm weather in the North and Middle West. The lighter materials, such as the 38-40 prime white and light straw, of good specifications are available for tractor fuel, but the heavier grades appear to be on the downgrade. However, road oil business may bring down the stocks of the fuel oils, and it appears certain that industrial business is picking up and may reach a point which will take care of a large part of the threatened surplus. If there is a letup in the high level of cracking operations in the Illinois and Indiana refining districts, the 32-36 distillates and gas oils may present a real problem at the time jobbers and distributors are thinking about their contracts with refiners.

One of the larger refiners in the district is reported to be making preparations to go into the tank wagon end of the burning oil business much more extensively than in the past. This company, it is said, will offer consumers a 24-hour burner service free of charge as a part of the contract agreement. One of the tank car contracts which is said to be in preparation will not show a top price, or maximum, and prices will be based on the published market on date of shipment. There is some talk that many of the burning oil distributors will attempt to eliminate the top price stop in the tank wagon contracts.

Fuel oil tank car prices are 5 cents lower on the 26-30 grade and 2½ cents lower on the lower gravities.

East Central Texas Wildcats

Week Ending April 17

CHEROKEE COUNTY

Company, well, farm name, section and block—	Remarks
T. C. Cardwell et al's No. 1 W. C. Wallace, 330 ft. from S line and 330 ft. from W line of lease, C. Burnett Sur.	Spudded and S.D.
Hooper et al's No. 1 Doctor Overton, 330 ft. from N and E lines of tract and 330 ft. out of most easterly NE cor. of survey, Wesley Dikes Sur.	T.D. 3,656 ft.; drilled plug.
L. J. Hopcroft et al's No. 1 J. R. Taylor, 2,600 ft. from E line and 2,000 ft. from S line of survey, G. M. Doherty Sur.	Derrick.
Wilson & Stubbs' No. 1 L. Robert, 450 ft. from S and 150 ft. from W line of lease, J. B. Wolfin Sur.	Prepare to deepen; T.D 3,464 ft

ELLIS COUNTY

Paris Oil Co.'s No. 1 O. S. Bain, 1,500 ft. from S line and 300 ft. from W line of 60-ac. lease, R. M. Williams Sur.	S.D. 1,010 ft.

FANNIN COUNTY

Lauther Kenn et al's No. 1 Steren, center of survey, 1 mile SW of Ladonia, John Wills Sur.	S.D. 1,945 ft.

FREESTONE COUNTY

Clyde Creighton's No. 1 Holley Bros., 554 ft. from W line and center of N and S lines of lease, A.B.M. Sur.	T.D. 4,507 ft.

GREGG COUNTY

Bay Oil Corp.'s No. 5 J. M. Wheeler, 150 ft. due N of Pelphrey Bros.' No. 1 Wheeler, D. Ferguson Sur.	Derrick.
S & F Oil Co.'s No. 2 M. Jackson, 330 ft. from S line and center of E and W lines of 16.66-ac. lease, G. P. Penn Sur.	Derrick.
Gulf Production Co.'s No. 14 S. C. Fishburn, 330 ft. from S line and 1,650 ft. from E line of 200-ac. lease and survey, F. W. Johnson Sur.	Running csg.; T.D. 3,510 ft.
J. T. Hill's No. 1 J. M. Christian, 5,800 ft. from S line and 4,350 ft. from W line of survey, G. W. Hooper Sur.	Waiting on cmt. to set 3,585 ft.
Humble Oil & Refining Co.'s No. 15 T. M. Armstrong, 1,534 ft. from N line and 843 ft. from E line of lease, J. H. Crosby Sur.	Set surface csg.
Lion Oil & Refining Co.'s No. 2 Evans, S offset to Sinclair Prairie's No. 10 Williams, P. McAnnelly Sur.	Derrick
Magnolia Petroleum Co.'s No. 4 V. L. Goolsby, 318 ft. from N line and 272 ft. from W line of lease, G. R. Rains Sur.	Rig up.
Ray Drilling Co.'s No. 2 Tubbs, 150 ft. from W line of lease in D. Sanches Sur.	Waiting on standard rig; will not flow; T.D. 3,585 ft.
Sun Oil Co.'s No. 4-A Allen Tooke, 450 ft. from W line and 6,880 ft. from S line of survey, W. H. Castleberry Sur.	Rig up.
L. W. Tarkington's No. 1-A Mrs. A. M. Greggston, 187 ft. N of Johnston's No. 1 Greggston and center of N and S lines of lease, M. Dillard Sur.	Derrick

HILL COUNTY

Spikes et al's No. 1 Holman, 150 ft. from NW cor. of 100-ac. tract, one-half mile S of Mt. Calm, Latham Sur.	Prepare to spud.

HOPKINS COUNTY

E. P. Corley's No. 1 Jumper	Moving in rig; T.D. 1,630 ft
Culberson & Lynch's No. 1 Louis Stribling, 150 ft. from NW cor. of tract and lease, Thomas Norris Sur.	Rig up.

HUNT COUNTY

Johnson & Russell et al's No. 1 N. A. Fregarg, 150 ft. from W line, 500 ft. from S line of 30-ac. tract, 3 miles E of Campbell, Wm. Glass Sur.	T.D. 4,038 ft.

KAUFMAN COUNTY

Sisy-Bentley-Brewer et al's No. 1 J. B. Hunter, 300 ft. from S line and 150 ft. from SE line of 500-ac. tract, 4 miles S of Terrell, R. Sowell Sur.	T.D. 700 ft.

LIMESTONE COUNTY

C. C. Curtis et al's No. 1 Emma Daniels, 150 ft. from W line and 150 ft. from S line of 42.5-ac. tract in Pedro Varela Sur.	Set surface csg. 60 ft.

RED RIVER COUNTY

Ajo Oil Co.'s No. 1 Nickels & Daniels, center of 8 780 acres of 1,868-ac. tract, 8 miles N of English, Hugh B. Shaw Sur.	Bldg. derrick.

RUSK COUNTY

Brawn, receiver's No. 1 Lide, center of 4-ac. lease, S. P. Hollingsworth Sur.	T.D. 3,756 ft.
Devonian Oil Co.'s No. 17 R. A. Motley, 947 ft. from N line and 3,120 ft. from E line of lease, William Killen Sur.	Drlg. 2,175 ft.
H. Gary's No. 2 Redwine, center of Blk. No. 9, in Juan Ximenes Sur.	Prepare to run csg.; T.D. 3,535 ft.
Griffin & Barnes' No. 1 Fee, 13 ft. from S and W lines of 2-ac. tract, J. B. De Cadena Sur.	Waiting on cmt. to set.
H. B. W. Oil Co.'s No. 2 Redwine, 150 ft. from E line and center of Payne's No. 1 Redwine, Juan Ximenes Sur.	Derrick
Humble Oil & Refining Co.'s No. 81 L. D. Crim, 620 ft. from N line and 5,670 ft. from E line of survey, E. G. Sevier Sur.	Waiting on cmt. to set 3,595 ft.; T.D. 3,632 ft.
Humble Oil & Refining Co.'s No. 6-C H. Sexton, 330 ft. from S and W lines of lease, McCabe Sur.	Drlg. 3,708 ft.
Humble Oil & Refining Co.'s No. 18-A S. S. Laird, 789 ft. from E line and 3,330 ft. from S line of survey	Coring 3,605 ft.

(Continued on Next Page)

Issues Order Not to Buy From Cut Price Dealers

W. T. Holliday, president of the Standard Oil Co. of Ohio, has instructed all department heads of his company not to purchase materials from manufacturers who indulge in unreasonable wage or price cutting. Bidders maintaining sweatshop conditions will not be considered, he said.

Saying that recent disclosures of sweatshop conditions in some lines prompted a definite outline of the company's policy on purchases, Mr. Holliday added that his company would have no part in forcing workmen to accept less than a living wage.

The policy of the Standard Oil Co. was outlined by Mr. Holliday in a letter to the heads of departments. His letter follows:

"It has been, and continues to be, the policy of the company to eliminate bids of manufacturers whose prices are clearly at a point which would force workmen to accept less than a living wage to supply the order.

"Conditions are highly competitive in the oil industry and the Standard Oil Co. of course cannot pay more for its supplies than its competitors pay. It is compelled to buy closely, but never at the expense of a living wage for labor.

"Recently there has been a veritable orgy of wage and price reductions. 'Chiseling' by buyers is causing many sellers to submit bids far below their costs of production. The manufacturer who gets an order on such a basis expects to buy his materials in the same way, to further depress wages.

"We believe this practice is unsound. Prices already have been deflated too far. Business cannot hope to recover until the vicious spiral of deflation in prices and wages is checked.

"Price cutting below present ruinous levels does not stimulate sales. Buying will expand only when prices stabilize and start upward, as is already true in some commodities. We believe it is time for business men to encourage this improvement.

"Accordingly, please make clear to all manufacturers and sellers seeking our patronage that our policy remains one of buying only from reputable firms who submit fair bids and who neither cut their prices below all reasonable production costs nor attempt to charge our company more than our competitors.

"Bidders maintaining sweatshop conditions will not be considered. It is our opinion that no reputable buyer will deliberately attempt to fill his requirements at the expense of forcing workmen to accept less than a living wage."

The force of the stand taken by Mr. Holliday can be better understood when it is known that his company purchases many hundreds of thousands of dollars worth of products annually, buying from hundreds of firms.

New Gross Production Tax Bill in Texas Is Subject to Criticism

AUSTIN, Tex., Apr. 15.—The administration's bill providing for an occupation tax on oil produced in the state was passed to engrossment by the House of Representatives after having been amended to provide a tax of 1 cent per barrel on all oil produced from wells producing 10 bbls. or less per day.

The amended bill provides a tax of 2 cents per barrel on oil from wells producing from 11 to 150 bbls. per day; 5 cents per barrel on oil from wells producing 151 to 250 bbls. and 20 cents per barrel on oil from wells producing from 251 bbls. per day upward.

The bill provides that the tax must be computed on a 42-gallon barrel basis, and without any deductions, and be based upon tank tables showing 100 per cent or production and exact measurement of content, and that the producer must keep accurate records of all oil produced and make monthly reports on oath.

It provides that the purchaser of oil pay the tax and deduct it from the payment due the producer or other interest holders and that if the oil is not sold within the month it is produced the producer must pay the tax at the same rate as if the oil were sold. The tax must be paid by the fifteenth of the month following the production of the oil. The tax is to be borne ratably by all parties interested in the oil, including producers and royalty owners.

One-half of the tax collected is to go to the public school fund and one-half to the general fund of the state.

All railroads, barges, trucks or pipe lines transporting oil are required to keep a detailed record of all oil so handled, which reports shall be open to state inspection.

The bill was submitted by Governor Ferguson, for the avowed purpose of holding down production in East Texas.

In submitting the bill for introduction Governor Ferguson called attention to the tremendous overproduction of oil in East Texas, and to the fact that the State of Texas "might lose millions of dollars in taxes" if prompt action is not taken to "protect the rights of our people and inspire the confidence of other authority as to our intention and determination to control the oil situation in Texas."

The bill would take the place of the present 2 per cent gross production bill which has been operative in the state for years.

Objections were made to the substitute bill from the moment it was presented. Under the present law the tax is 2 per cent of the gross value of the oil produced, the value being based on the price at which the oil has been sold. The new bill puts a straight 2 to 20-cent tax on all oil produced whether it is sold or not, and regardless of the price at which it is sold.

Oil brings different prices at the well in different fields in the state, and different prices in the same field, because of differences in gravity. These facts are considered in the present law by taxing the oil on a percentage basis. The new bill taxes a producer the same price for 10-cent oil as for $2 oil; as much for low-grade oil as for the highest grade oil. One critic of the bill puts it: "Under the present tax, which is levied on a percentage basis, the state shares in both the prosperity and the hard times of oil producers. If prices are low the state does not take a larger share of the price of the oil than when prices are high. Passage of the flat-rate tax bill would mean that the state insists on its share whether the producer gets anything or not."

POLAND BANS IMPORTS

NEW YORK, Apr. 17.—The Polish government has declared an embargo on the importation of all crude and refined petroleum, under which none of these products may be brought into the country without an import permit from the ministry of trade and commerce. During the past year, Poland imported 2,600 tons of asphalt and 1,800 tons of lubricating oils. Polish refiners for the past few years have been experimenting in the production of lub oils, to obviate the necessity of importing this product.

Benefits of Proration Told Texas Association

DALLAS, Tex., Apr. 17.—The status of the oil and gas industry in the Southwest occupied the attention of the Southwestern Social Science Association during its meetings here.

Proration of oil and gas production is primarily in the interest of the general public as it means conserving the great natural resources of the people, M. G. Cheney, petroleum geologist of Coleman, told the association.

"The benefits to be gained by the consumer are obvious," he said. "Conservation will lead to a lower average price and a more assured supply of these commodities which are essential to the industrial development of the Southwest. Hence large industrial users of these fuels will no doubt give due consideration to the determination of Texas and adjoining states to prevent waste and to enforce orderly development of these natural resources."

A summary of the oil conservation movement since 1926 and an analysis of the business and economic aspects of the public regulation of the oil industry were given by Prof. R. L. Conrod of the University of Texas. He showed how the attempts to curtail flush production by governors, militia, courts and state regulatory commissions were all attempts to reverse the older public policy of rugged individualism. He said if proration is to be made effective and the newer concept of regulation in the interest of the public is translated into law, such control methods must be larger than East Texas or Texas as a whole and must include the whole nation.

Based on the past the petroleum industry can be counted on to make great contributions to the material advancement of Texas, M. J. Norrell of the Magnolia Petroleum Co. told the conference.

"The petroleum industry is capable of carrying through its accepted responsibilities," said Mr. Norrell. "Just what the future holds nobody knows. Occupying the place it does in our commercial order, the petroleum industry with its potentialities for assisting in the future program of industrial development, craves the understanding of the public it serves and of the State which today produces more oil than any other like section in the world. It asks no recognition other than a consciousness that it has tried to prove itself a real builder, its policies directed in a spirit of co-operation and fair play."

While present conservation laws have reduced somewhat the frightful wastage of natural gas in Texas fields, the State is still suffering a tremendous wastage, particularly in fields producing both oil and gas, Elmer F. Schmidt, general superintendent of the Lone Star Gas Co., said. He estimated that over 200,000,000 feet of natural gas is being lost daily in Texas oil fields.

NEED MONEY TO PUBLISH BOOK

SHREVEPORT, La., Apr. 15.—A discussion of the Gulf Coastal Plain of Arkansas by Dr. George C. Branner, state geologists, was the feature of the recent meeting of the Shreveport Geological Society. The talk was a part of the results of five years' work by Doctor Branner and his department which are summed up in a manuscript just completed. The department has not been allowed sufficient funds to publish the work, on which the State already has spent $7,000. It is estimated $5,000 more is needed. It was suggested at the meeting that the major companies and others interested consider underwriting the cost of publication which, it was said, should not be difficult as 3,000 copies of the work already have been spoken for.

East Central Texas Wildcats

(Continued from Preceding Page)

Humble Oil & Refining Co.'s No. 4-B J. E. Sexton, 1,650 ft. from N line and 6,430 ft. from E line of survey, T. J. Martin Sur. ..... Rig up.

Humble Oil & Refining Co.'s No. 5-B J. E. Sexton, 1,800 ft. from N line and 3,150 ft. from W line of survey, T. J. Martin Sur. ..... Waiting on cmt. to set; T.D. 3,753 ft.

Humble Oil & Refining Co.'s No. 8 W. B. Key, 530 ft. from S line and 990 ft. from W line of lease and survey, G. W. Fields Sur. ..... T.D. 3,734 ft.

Humble Oil & Refining Co.'s No. 9 W. B. Key, 330 ft. from S line and 904 ft. from E line of survey, C. W. Fields Sur. ..... Rig up.

Jordan & Ramsey's No. 1 L. W. Prior, 330 ft. from N line and 607 ft. from E line of 53-ac. lease, Walker Pettit Sur. ..... Rig up.

Kimble & Acre's No. 1 Frederick, 150 ft. from S line and center of E and W lines of 10-ac. lease, Juan Ximenes Sur. ..... Derrick

Walker Murray et al's No. 1 W. H. Arnold, 330 ft. from S and W lines of 50-ac. tract, Levi N. Sparks Sur. ..... Rig up.

Olson Bros. No. 5 J. T. Brown, 200 ft. from N line and 700 ft. from W line of lease, M. J. Pru Sur. .... Derrick.

Parks et al's No. 1 Frederick, 4,400 ft. from W line and 450 ft. from N line of Juan Ximenes Sur. .. Testing; T.D. 3,700 ft.

Ross Seward's No. 1 Burton, J. J. Y'Barbo Sur. .. .. T.D. 4,487 ft

Snyder et al's No. 2 Stewart, 174 ft. NW of No. 1 and 190 ft. SE of C. L. Archer's No. 1 J. H. Stewart, John Womack Sur. ..... Derrick

Stanolind and Pure Oil Co.'s No. 2 W. H. Siler, 150 ft. from N line and 215 ft. from W line of W. B Perry Sur. ..... Top sand 3,602 ft.; reaming to test; T.D. 3,648 ft.

SMITH COUNTY

Long Drilling Co.'s No. 3 G. A. Turner, D. W. Campbell Sur. ..... Derrick.

TITUS COUNTY

Randua Newberry et al's No. 1 First State Bank, 1,391 ft. from S and 2,410 ft. from E line of James T. Box Sur. ..... Drlg. 3,300 ft.

R. L. Pevets and Fred Prince's No. 1 W. H. Crawford, 2,600 ft. from S line and 309 ft. from W line of 160-ac. tract, 1 mile S of Talco, I. P. Stern Sur. .... Rig up.

UPSHUR COUNTY

Conservative Oil Co.'s No. 2 Eva O'Byrne, 330 ft. from N and E lines of 20-ac. lease, D. Ferguson lease..... T.D. 3,048 ft.

B. F. Phillips' No. 2 Carrie Brooks, 275 ft. from N and S lines, and 330 ft. from W line of 18.07-ac. lease, J. F. Davidson Sur. ..... Top sand 3,599 ft.; T.D. 3,643 ft.

Wadley and Evans' No. 1 W. S. Jones, 330 ft. from S and E lines of 100-ac. lease, James M. Dunn Sur. ... T.D. 3,690 ft.; swabbed salt water; swabbing.

Wadley-Evans-Lyons et al's No. 1 Shuttlesworth, 330 ft. from NW cor. of Rosier and Pendleton's 50-ac. lease, J. M. Dunn Sur. ..... S.D. 3,690 ft.

Waggoner & McConnell's No. 4 Williams, 300 ft. from W line and center of N and S lines of 22-ac. lease, McKinley & Williams Sur. ..... T.D. 3,620 ft.; S.D.

VAN ZANDT COUNTY

Everett et al's No. 1 J. J. Goode, 165 ft. from N line of lease and 1,600 ft. from W line of survey, 2 miles S of Van, David Rose Sur. ..... Spudding.

Gulf Oil Co.'s No. 1 Gillentine, 150 ft. from S and E lines of E 4 acres of 42-ac. tract in Nacogdoches County School Land Sur. ..... Rig up.

Manning & Collins' No. 1 Mrs. Mollie High, center of 5-ac. tract, 2 miles NW of Myrtle Springs in William H. Bunch Sur. ..... Derrick.

Peden-Olson's No. 1 W. S. Brannon, 205 ft. from N and 160 ft. from W lines of 45-ac. tract, 2½ miles N of John Goodman Sur. ..... S.D. for storage.

Petroleum Pipe Line Co.'s No. 1 Mrs. S. S. McGee, 173 ft. from N and W lines of 53-ac. tract in Blk. No. 2, William Daniel Sur. ..... Rig up.

Pure Oil Co.'s No. 3 D. O. Mayo, 200 ft. N of S line and 225 ft. E of W line of D. O. Mayo 29.5-ac. tract, J. Prado Sur. ..... Drlg. 2,196 ft.

Pure Oil Co.'s No. 7 L. M. Brawner, 970 ft. N of most southerly S line and 250 ft. E of most easterly W line of L. M. Brawner 147.9-ac. tract, John Walling Sur. ..... Drlg. 2,525 ft.

Pure Oil Co.'s No. 2 R. M. Butler, 150 ft. from N and 793 ft. from W lines of 89.16-ac. tract in David Rose Sur. ..... Drlg. 1,700 ft.

Roy Stumpff's No. 1 M. I. Riggs, 169 ft. from E line and 250 ft. from S line of tract No. 2 and 330 ft. from E line of lease, 4 miles NE of Van, William Daniel Sur. ..... Drlg. 2,350 ft.

Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ..... T.D. 2,850 ft.; skid 50 ft. W and set 10-in. csg. at 181 ft.; waiting on cmt.

WOOD COUNTY

Hull & Short's No. 1 T. H. Peterson, 600 ft. from S line and 300 ft. from E line of 320-ac. tract and survey, 4 miles E of Mineola, W. B. McNutt Sur. .. S.D. 3,290 ft.

Wildcat Operations in West Texas

(Continued from Page 42)

Lawson's No. 2-B Edwards, 330 ft. from S and W, Sec. 16, Blk 33, Twp. 2s T.&P. Sur. ..... Drlg. 3,025 ft.

H. O. Wooten's No. 2 W. P. Edwards, 1,650 ft. from E line and 330 ft. from S line of Sec. 17, T.&P.R.R. Sur., Blk. 33, Twp. 1s ..... Rig up.

HOWARD COUNTY

M. D. Bryant et al's No. 1 L. C. Denman, 2,310 ft. from S and W lines of Sec. 10, Blk. 30, Twp. 1s, T.&P. Sur. ..... Underreaming at 715 ft.

Oppenauer et al's No. 1 Leatherwood, C of SE of NW, Sec. 25, Blk. 31, Twp. 1n, T.&P. Sur. ..... Material on ground.

L. C. Harrison's No. 4 L. C. Denman, 2,370 ft. from the E line and 2,325 ft. from S line of Sec. 10, T.&P.R.R. Sur., Blk. 30, Twp. 1s ..... Rig up.

Merrick-Lamb's No. 6 Chalk, 1,650 ft. from N line and 330 ft. from W line of Sec. 125, Blk. 29, W.&N.W. Sur. ..... Drlg. 1,656 ft.

Mid-Continent Pet. Co.'s No. 2 Denman, 330 ft. from S and E of Sec. 10, Blk. 30, Twp. 1s, T.&P. Sur. ..... Drlg. 1,935 ft.

Myers et al's No. 1 Denman, 2,305 ft. from S and 2,320 ft. from E, Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur. ..... Drlg. 1,950 ft.

Mid-Continent Oil & Gas Co.'s No. 1 Denman, 990 ft. from S and 330 ft. from E, Sec. 10, Blk. 30, Twp. 1s, T.&P. Sur. ..... Drlg. 1,935 ft.

Plymouth Oil Co.'s No. 8 Kloh-Abrams, 1,650 ft. from N and 2,310 ft. from W line of Sec. 5, Blk. 32, T.&P.R.R. Sur. ..... Waiting on packer; T.D. 2,599 ft.

Sinclair Prairie Oil Co.'s No. 1 Denman, 330 ft. from N line and 330 ft. from W line of Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur. ..... Drlg. 623 ft.

Sinclair Prairie Oil Co.'s No. 6 Dodge, 330 ft. from S line and 330 ft. from W line of Sec. 11, Blk. 30, Twp. 1s, T.&P. Sur. ..... Spudding 170 ft.

Sinclair Prairie Oil Co.'s No. 5 Dodge, 2,310 ft. from N and 330 ft. from W, Sec. 11, Blk. 36, Twp. 1s, T.&P. Sur. ..... Shot 300 qts. from 2,645-2,815 ft.; flowed 140 bbls. first 12 hrs.

Jack Wallace et al's No. 1 Scott, 990 ft. from N and 330 ft. from E lines of Sec. 92, Blk. 39, W.&N.W. Sur. ..... Underreaming; T.D. 785 ft.

IRION COUNTY

Perry Fox's No. 1 W. C. Lawhorn, 200 ft. from N and 500 ft. from W of Sur. No. 731 ..... Drlg. 275 ft.

Straughn et al's No. 1 Kaiser, 1,980 ft. from N and 1,320 ft. from W, Sec. 49, H. Cooper Sur. ..... Drlg. 1,100 ft.

JONES COUNTY

Condor Pet. Co.'s No. 1 Holt, 1,980 ft. from S and 1,980 ft. from W, Sec. 4, Blk. 30, T.&P. Sur. ..... Moving in machine.

Dyer's No. 1 Odom, 200 ft. from S and 170 ft. from W of N 320 acres, G. Zumwalt Sur. ..... Moving in tools.

Johnson's No. 1 Huddleston, 165 ft. from S and W of N half of N half of Sec. 39, Blk. 16, T.&P. Sur. ..... Running casing 3,505 ft.

Shaheen Oil Co.'s No. 1 Sandlin, 1,320 ft. from S and E lines of Sec. 8, in Mrs. Louisa Matthews Sur. No. 7.. Drlg. 470 ft.

Smart & Reynold's No. 1 Reynolds, 2,500 ft. from N and 150 ft. from W, Sec. 2, W. T. Scott Sur. No. 3... Fishing 1,474 ft.

LOVING COUNTY

A. & M. Pet. Corp.'s No. 1 Wheat, 2,310 ft. SW, 990 ft. SE, Sec. 71, Blk. 1, W.&N.W. Sur. ..... Cellar.

Eppenauer Drlg. Co.'s No. 1-A Victor, 330 ft. from SW and 338 ft. from SE of NW of N half Sec. 4, Blk. 2, W.&N.W. Sur. ..... Rigging up standard tools

Goldman et al's No. 2 Allen, 330 ft. from NW, 2,310 ft. from SW, Sec. 90, Blk. 1, W.&N.W. Sur. ..... Rig.

Goldman et al's No. 1 Reagan-McElvain, 330 ft. from NE, 2,310 ft. from NW, Sec. 84, Blk. 1, W.&N.W. Sur.. Cellar.

Thomas' No. 1 Wheat, 2,310 ft. from NW, 990 ft. from NE, Sec. 83, Blk. 1, W.&N.W. Sur. ..... S.D. 4,336 ft.

PECOS COUNTY

Bennett et al's No. 1 Powell, 330 ft. from SW and SE, Sec. 76, Blk. 10, H.&G.N. Sur. ..... Drlg. 1,640 ft.

Cochran et al's No. 1 Pecos Valley Co., 1,650 ft. from SE and SW lines of Sec. 84, Blk. 3, H.&T.C. Sur. ..... T.P. 1,558 ft.; swabbed 30 bbls. in 4 hrs.; T.D. 1,591 ft.

Humble Oil & Ref. Co.'s No. 1 White-Baker Co., 1,320 ft. from N and E lines of Sec. 44, Blk. 2, T.C.R.R. Sur. ..... Cmtd. csg.; T.D. 842 ft.

Kimberlin et al's No. 1 B. D. Gregg, 2,488 ft. from NW and 150 ft. from NE, Sec. 101, Blk. 10, H.&G.N. Sur... Location.

Wahlenmaier et al's No. 1 Monroe, 4,060 ft. W and 330 ft. N from SE cor. of Sec. 41, Blk. 1, L.&G.N. Sur. ... Drlg. 1,060 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 8-C University, 710 ft. from S and 2,410 ft. from E, Sec. 12, Blk. 2 ..... Flowed 2,073 bbls.; T.D. 8,800 ft.

Big Lake Oil Co.'s No. 9-C University, 2,410 ft. from N and 765 ft. from E, Sec. 12, Blk. 2 ..... Drlg. 7,790 ft.

Big Lake Oil Co.'s No. 10-C University, 2,025 ft. from S and 375 ft. from W, Sec. 35, Blk. 9 ..... Cmtd. csg. at 2,880 ft.

Big Lake Oil Co.'s No. 11-C University, 2,300 ft. from S line and 2,140 ft. from E line, Sec. 12, Blk. 2, University Sur. ..... Bldg. derrick.

Continental Oil Co.'s No. 7-B University, 1,900 ft. from N and 660 ft. from W, Sec. 36, Blk. 9 ..... Drlg. 6,950 ft.

Continental Oil Co.'s No. 8-B University, 1,300 ft. from S and 1,775 ft. from W, Sec. 36, Blk. 9 ..... Drlg. 6,740 ft.

Noel T. Lawson's No. 1 Hughes, 1,980 ft. from S line and 1,980 ft. from E line of Sec. 23, Blk. F, C.&M. Sur.... Moving in material.

J. P. Williams et al's No. 1 Scott, 1,650 ft. from N and 330 ft. from W, Sec. 178, Blk. 1, T.&P. Sur. ..... Drlg. 2,000 ft.

REEVES COUNTY

Hugo Froels et al's No. 1 S. B. Greenman, 330 ft. from NE and 2,310 ft. from SE lines of Sec. 21, Blk. 3, H.&G.N. Sur. ..... S.D. 400 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 519 ..... S.O. 3,417-20 ft.; S.D. 3,684 ft

John Caster's No. 1 Hall, 330 ft. from S and W, Sec. 149, E.T.R.R. Sur. ..... Spudded.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, C Sec. 29, Blk. M, G.H.&S.A. Sur. ..... Will run csg.; T.D. 5,934 ft.

Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,302 ft. from E of Sec. 77, Blk. L4, T.C. Sur. ..... Fishing; T.D. 6,250 ft.

SCURRY COUNTY

Meinzleman et al's No. 1 Hood, 436 ft. from N and 488 ft. from E, Sec. 87, Blk. 3, H.&T.C. Sur. ..... S.D. 1,150 ft.

WARD COUNTY

Abell Bros.' No. 2 Sloan, 990 ft. from NE and NW, Sec. 34, Blk. 5, H.&T.C. Sur. ..... T.D. 2,600 ft.; will plug back.

Atlantic-Penn's No. 3 Bennett, 330 ft. from SE line and 2,310 ft. from SW line of Sec. 16, Blk. 34, H.&T.C. Sur. ..... T.P. 2,295-2,308 ft.; flowing 200 bbls. per day.

Atlantic Oil Prod. Co.'s No. 1 University, 330 ft. S and E, Sec. 3, Blk. 16 ..... Drlg. 482 ft.

Atlantic Oil Prod. Co.'s No. 1 Blank-Camp, 1,320 ft. from NW and SW Sec. 14, Blk. 34, H.&T.C. Sur. ..... T.D. 2,884 ft., sand; 1,400 ft. sulphur water 36 hrs. 2,880-84 ft., shot 120 qts. 2,705-2,730 ft.; no results; shot 80 qts. 2,690-2,630 ft.; flowed 36 bbls.; to run tubing.

George Bentley et al's No. 1 C. Bergman, 330 ft. from NE line and 2,310 ft. from NW lines of Sec. 24, Blk. 5, H.&T.C. Sur. ..... Drlg. 1,760 ft.

George Bentley et al's No. 1 A. Emory, 1,650 ft. from NE line and 2,310 ft. from NW line of Sec. 26, Blk. 5, H.&T.C. Sur. ..... Drlg. 852 ft.

W. A. Black et al's No. 1 Ann B. Gordon, 990 ft. from NW and 330 ft. from NE lines of Sec. 6, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,770 ft.

Bradford's No. 1 Beatty, 1,650 ft. from NW and 330 ft. from SW, Sec. 3, Blk. 34, H.&T.C. Sur. ..... Drlg. 955 ft.

Bradford et al's No. 1 Emery, 2,970 ft. from NE and 990 ft. from NW, Sec. 26, Blk. 5, H.&T.C. Sur. ..... Rig up.

Bundy et al's No. 1 Bennett, 2,310 ft. from NW and SW Sec. 16, Blk. 34, H.&T.C. Sur. ..... Swabbing and cleaning out; T.D. 2,632 ft.

Eppenauer Drlg. Co.'s No. 1 G. S. Comos, 495 ft. from N line and 435 ft. from NW line of Sec. 4, J. W. Hollingsworth Sur. ..... Rig up.

Eppenauer Drlg. Co.'s No. 1 University, 330 ft. from N and 440 ft. from E of S half of Blk. 16 ..... Moving in material 100 ft.

Gerber O. & G. Co.'s No. 1 Stubbs, 330 ft. from S, 990 ft. from W, Sec. 9, Blk. 3, B.&B. Sur. ..... Cellar.

Graham Corp.'s No. 1 Bennett, 2,310 ft. from NE line and 330 ft. from SE line of Sec. 16, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,735 ft.

Gulf Prod. Co.'s No. 16 Hutchings, 1,983 ft. from S and 1,650 ft. from W, Sec. 5, Blk. F ..... Drlg. 2,625 ft.; flowing by heads.

Gulf Prod. Co.'s No. 17 Hutchings, 330 ft. from W line and 1,151 ft. from S line of Sec. 5, Blk. A, G.&M.M.B.&A. Sur. ..... Drlg. 1,050 ft.

Gulf Prod. Co.'s No. 36 O'Brien, 990 ft. from S line and 660 ft. from W line of Sec. 6, Blk. F, G.&M.M.B.&A. Sur. ..... Rigging up standard tools.

Humble Oil & Ref. Co.'s No. 1 Louis, Richter et al, 1,650 ft. from the NE line and 990 ft. from SE line of Sec. 27, H.&T.C. Sur., Blk. 34 ..... Rig up.

Messenger and Wadsworth's No. 1 Hardage and Wilson, 330 ft. from SW and 330 ft. from SE, Sec. 11, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,570 ft.

Moran et al's No. 1 Reynolds, 170 ft. from SE and SW of NW 80 of NE half Sec. 12, Blk. 5, H.&T.C. Sur. .. T.D. 990 ft.; S.D.

Rector-Plains' No. 1 Monroe, 1,320 ft. from SE line and 330 ft. from NE line of Sec. 31¼, James Ross Sur. No. S.F. 7,666 ..... Drlg. 4,240 ft.

Skelly Oil Co.'s No. 2 Brillhart, 1,320 ft. from SE line of Sec. 13, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,750 ft.

Stanolind Oil & Gas Co.'s No. 1 Whitlock, 495 ft. NE. 2,280 ft. SE, Sec. 14, Blk. 34, H.&T.C. Sur. ..... T.P. 2,356 ft.; S.D. 2,515 ft.

Sturm and Simms' No. 2 Jones (old well drilled deeper), 1,650 ft. from NE and 330 ft. from SE, Sec. 25, Blk. 29, P.S.L. Sur. ..... Rig up to deepen.

O. R. Thomas et al's No. 2 John B. Bennett, 2,310 ft. from SE and 1,650 ft. from NE lines of Sec. 16, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,175 ft.

Thompson's No. 1 Johnson, 2,310 ft. from SW and 330 ft. from NW, Sec. 9, Blk. 34, H.&T.C. Sur ..... Fishing; T.D. 2,351 ft.

Wahlenmaier Pet. Corp.'s No. 1 Bergman, 2,310 ft. from NE line and 1,650 ft. from SE line of Sec. 26, H.&T.C. Sur. ..... Spudding 75 ft.

WINKLER COUNTY

Colonial Oil Co.'s No. 1 State vacancy, 330 ft. E and 103 ft. N of NW cor. Sec. 3, Blk. 77, P.S.L. Sur. ..... Drlg. 3,035 ft.

Richardson et al's No. 1-B Scarborough, 990 ft. from S and 1,980 ft. from E, Sec. 18, Blk. 74, P.S.L. Sur. .. Drlg. 3,234 ft.

Sid Richardson's No. 1 State-Scarborough, 1,320 ft. E and 102½ ft. N of the NW cor. of Sec. 1, School Blk. 77, located in Sur. No. 1, Blk. WF ..... Rig up.

Wildcat Operations in Texas Panhandle

Week Ending April 17

CARSON COUNTY

Company, well, farm name, section and block—	Remarks
The Texas Co.'s No. 2-B Garner, 990 ft. N and E, Sec. 95, Blk. 4, I.&G.N. Sur.	Rig up.
Texas Nat. Gas Co.'s No. 5-S Schaffer, 1,425 ft. S, 1,490 ft. W, Sec. 69, Blk. 3, I.&G.N. Sur.	Rig.
Texoma Nat. Gas Co.'s No. 4-S Schaffer, 1,334 ft. S, 1,325 ft. E of SE Sec. 48, Blk. 4, I.&G.N. Sur.	Drlg. 495 ft.
Texoma Nat. Gas Co.'s No. 1 Gores, 1,320 ft. from S and 1,327 ft. from E lines of SE Sec. 43, Blk. 4, I.&G.N. Sur.	Cmtd. 6⅝-in. csg. 2,447 ft.
Union Pet. Co.'s No. 3 Cooper, 330 ft. N, 310 ft. E SE. Sec. 5, Blk. 9, I.&G.N. Sur.	Cellar.

CHILDRESS COUNTY

G. V. McClintock et al's No. 1 B. F. Moore, C Sec. 47, F. P. Knott Sur.	T.D. 2,377 ft.
Massy & Peters' No. 1 O. L. Tucker, 150 ft. S and W lines of Sec. 4, F. P. Knott Sur.	Rig up standard tools.

COLLINGSWORTH COUNTY

Tittle, Cochran et al's No. 1 Boyles, 150 ft. S and E of Sec. 90, Blk. 14, H.&G.N. Sur.	Crooked hole 146 ft.

GRAY COUNTY

Gordan Burch's No. 1 Laugham, 990 ft. S, 330 ft. E Sec. 1, W½ NE, Sec. 1, Blk. B-2, H.&G.N. Sur.	Drlg. 2,795 ft.
Sam Danner's No. 1 Cobb, 330 ft. S and W NE, Sec. 166, Blk. 3, I.&G.N. Sur.	T.D. 3,334 ft; T.P. 3,345 ft; shot; no test.
Dolomite Prod. Co.'s No. 1 Sailor, 330 ft. N and E, Sec. 111, Blk. 3, I.&G.N. Sur.	Shot with 280 qts. 3,120-3,230 ft; S.D. 3,230 ft.
Gray County Prod. Co.'s No. 1 Huselby, 330 ft. from S and W, E½ NW, Sec. 55, Blk. 25, H.&G.N. Sur.	T.D. 2,790 ft; pay 2,625-35 ft. and 2,755-76 ft; fishing.
Masda-Shell's No. 4 Coombs-Worley, 990 ft. from N line 330 ft. from E line, Sec. 35, Blk. 3, I.&G.N. Sur.	Rig.
Ochiltree et al's No. 1 Hughey, 340 ft. S, 330 ft. E E half SE, Sec. 129, Blk. 3, I.&G.N. Sur.	T.D. 3,357 ft; T.P. 3,170 ft; shot with 100 qts. from 3,170-3,340 ft.; C.O.
Parton Holt's No. 4 Morse, 660 ft. from N and E of E half SW, Sec. 5, Blk. 26, H.&G.N. Sur.	S.D. 2,804 ft.
Saunders et al's No. 2 Sullivan, 822 ft. from W, 231 ft. from NE, 160 ft. S, 264 ac. of N½, Sec. 136, Blk. 3, I.&G.N. Sur.	Will plug back to 3,276 ft. and shoot
Sinclair Prairie Oil Co.'s No. 1-E Combs-Worley, 330 ft. from S and E, Sec. 34, Blk. 3, I.&G.N. Sur.	C.O. 3,084 ft.
Skelly Oil Co.'s No. 1 C. That, 330 ft. from S line, 330 ft. from W line, SW Sec. 1, H.&G.N. Sur., Blk. 1...	Drlg. 2,530 ft.
Sun Oil Co.'s No. 1-B Combs-Worley, 330 ft. S and E of SW Sec. 34, Blk. 3, I.&G.N. Sur.	S.D.; T.D. 3,050 ft.
Tedesco-Bell O. & G. Co.'s No. 4 Morse, 990 ft. N and W SE, Sec. 1, Blk. 26, H.&G.N. Sur.	Drlg. 2,415 ft.
Paul Tharp's No. 1 Short, 330 ft. from N and W of Sec. 2, Blk. 1, H.&G.N. Sur.	T.P. 2,968 ft; T.D. 3,070 ft; shot and S.D. for connection.
Warner Oil Co.'s No. 1 Webb, 660 ft. from S and W of W 80 of N½ Sec. 42, Blk. 25	Drlg. 880 ft.
Wilcox O. & G. Co.'s No. 22 Combs-Worley, 330 ft. N and E, W½ Sec. 35, Blk. 3, I.&G.N. Sur.	Rig up.

HEMPHILL COUNTY

Hoover's No. 1 Hoover, 350 ft. from N, 1,200 ft. from E, G. S. Hood Sur.	Drlg. 5,370 ft.

HUTCHINSON COUNTY

Alexander's No. 1 Cockrell, 330 ft. N and E of E 80 of S 160, Sec. 3, Blk. M-2, T.C. Sur.	S.D. 3,029 ft.
Badger Oil Co.'s No. 5 Lewis, 2,278 ft. from S, 330 ft. from W, Sec. 12, Blk. L, E.L.&R.R. Sur.	Bldg. rig.
W. E. Means et al's No. 1 Pond, 330 ft. S and E, N½ of N 165½ acres, Sec. 2, Blk. M-21, T.C.R.R. Sur.	Cellar.
Joe Murphy's No. 1 Watkins, 440 ft. from N and W of N half, Sec. 13, Blk. M-21	Swabbed 200 bbls. after shot; T.D. 2,974 ft.
Ryan Consolidated's No. 2 Johnson, tract No. 9, Mary Whitley Sur.	O.W.D.D.; T.D. 2,981 ft.
H. Steckel's No. 1 J. A. Whittenburg (Amerada), 430 ft. from S line, 990 ft. from W line, Sec. 37, T.C.R.R. Sur.	C.O. 2,996 ft.
H. Stakel's No. 4-D G. A. Whittenburg, 450 ft. from N line, 990 ft. from W line, Sec. 38, Blk. M-23, T.C.R.R. Sur.	Rig up.
Pexilvania Oil Co.'s No. 1 Halle, 330 ft. S, 330 ft. W, Sec. 16, Blk. 1, E.L.R.R. Sur.	Drlg. 2,984 ft.

MOORE COUNTY

Canadian River Gas Co.'s No. 2-A Perkins, 3,250 ft. S of most northerly NE cor, 200 ft. W of E line, Sec. 54, Blk. 47, H.&T.C. Sur.	Drlg. 2,350 ft.

ROBERTS COUNTY

Chicken Creek Oil Co.'s No. 1 Ledrick, 330 ft. N and W, Sec. 55, Blk. C, G.&M. Sur.	Recmtng. csg.; T.D. 4,980 ft.

WHEELER COUNTY

Delaney et al's No. 1 Sitter, 330 ft. from S and W of E half NE, Sec. 33, Blk. 24	Est. 15,000,000 ft. gas; S.D. 2,711 ft.
Helena O. & G. Co. et al's No. 1 Below, C NE SW, Sec. 50	Drlg. 1,610 ft.
Osborne et al's No. 2 Sloss & Admire, 330 ft. from N line and 1,530 ft. from E line of NE Sec. 47, H.&T. C. Sur., Blk. 13	T.D. 1,767 ft.; standardizing.
B. M. Rhodes' No. 1 Noel, 330 ft. S and E NE, Sec. 54, Blk. 24, H.&G.N. Sur.	T.P. 2,430 ft; T.D. 2,482 ft; putting on pump.
Rogers & Harner's No. 1 J. O. Clark, 990 ft. S and W of Sec. 6, Blk. 24, H.&G.N. Sur.	Rig.

Open Oklahoma City Field for New Potentials; 3,000-Bbl. Well Completed in Tatums Pool

By W. A. SPINNEY
Staff Correspondent, Oklahoma Fields

The reopening of the Oklahoma City Field to take new potentials, and the completion of a large well in the Tatums Field, in Carter County, featured Oklahoma's developments. The extension well in the Keokuk Falls area of Seminole County was shut down about 200 feet below the depth the discovery well found its production.

Under the new law the enforcement of proration is taken from the governor, but he maintains he still has authority to enforce the laws under military rule if the enforcement is not carried out by the Corporation Commission.

The newly appointed state umpire, Carl Giles, and the assistant umpire, Crockett Scrivner, announced they would take over the enforcement of proration on April 17, and on that date the Oklahoma City Field was permitted to open and take potentials on the Wilcox sand wells. The Wilcox sand wells in the Oklahoma City Field have been shut down since April 1 and the Simpson sand wells since April 5.

State Umpire Giles also announced that until his list of employes was completed the men under Colonel Murray and Ray M. Collins were expected to continue to handle the work as in the past. The new umpire also asked the oil companies until further notice to make their reports as in the past, either to the Oklahoma City office or to Ray M. Collins' office.

During the week Phillips Petroleum Co.'s No. 1 Holstein, NW cor. NE SW NE, Section 22-11-3w, in the southwest part of the Oklahoma City Field, flowed 895 bbls. of oil the first hour from the Wilcox sand at 6,509-98 feet. The gas was estimated at 11,000,000 feet a day. The well was then shut in.

Good Well in Tatums

Southern Oklahoma oil fields were revived during the week when the Daphfine Oil Co.'s No. 2 Majors, SE cor. NE SE Section 25-1s-3w, flowed 590 bbls. of oil in four hours from sand at 2,392-2,446 feet. It was estimated at 3,000 bbls. a day, one of the largest wells yet completed in the Tatums Pool, in Carter County. Daphfine Oil Co.'s No. 3 Majors has cemented surface casing. It is located 660 feet west of No. 2 Majors.

Trevelyn Oil Co.'s No. 1 Majors, NE cor. SE Section 25-1s-3w, is a rig. The Samedan Oil Co.'s No. 2 Hopson, NE cor. SE NE Section 25-1s-3w, was drilling at 500 feet. Wirt Franklin Petroleum Corp.'s No. 1 Burton, NE cor. SW SE Section 31-1s-2w, was rigging.

Tatum Oil Co.'s No. 1 Sparks, SW cor. NW Section 13-1s-3w, three locations north of production, found a showing of oil in a sand series from 2,365 to 2,503 feet. Casing has been cemented and the well shut down for the concrete to harden.

E. M. Boring and others' No. 1 Riddle, NE cor. NW SW Section 4-1s-3w, about 5 miles northwest of the Tatums Field, which found a showing of oil and gas at 2,039 feet, was still shut down after cementing casing at 1,800 feet.

Navajo Oil & Gas Co. and others have a rig up for No. 1 Payne, SE cor. SW NW Section 18-1s-5w, Stephens County, on the old Cruce structure. This test is expected to be drilled to a total depth of 6,500 feet. A number of companies are interested in the test which will be one of the deepest wells ever drilled in the southern part of the State.

Production of Prominent Pools

Production from the principal pools in the State for the week ending April 15, was as follows:

Pool—	Bbls.
Bowlegs	9,940
Bristow-Slick	11,200
Burbank	10,000
Carr City	7,275
Earlsboro	12,095
East Earlsboro	16,365
South Earlsboro	1,715
Little River	15,815
Oklahoma City	30,795
St. Louis-Pearson	19,020
Seminole	9,825
Tatums	3,600
Total	147,645
Others	188,455
Total state	336,040

Important Test Shut Down

Barnsdall Oil Co.'s No. 1 Deere, SW cor. NW NW Section 36-11-6, in the Keokuk Falls area of Seminole County, which was seeking to extend the Misener sand production in that area, was shut down at 4,365 feet about 10 feet in the Woodford shale. It is about 200 feet below where the discovery well found the Misener sand from which it is producing.

Interest in New Leasing

Interest in wildcat acreage continues in the State. During the week the Shawnee Indian Agency offered 145 tracts consisting of 13,406 acres of which 10 tracts totaling 1,081 acres were sold for a bonus of $2,342.

The Gypsy Oil Co. paid $523 for the SE Section 9-11-5, Pottawatomie County, R. J. Buck paid $420 for tract No. 145 in the NE SW and SE SW Section 6-10-5, and W. E. Elson paid $624 for NE NE Section 24-11-4, Pottawatomie County.

These tracts are on the edge of the Stanolind Oil & Gas Co. and the Amerada Petroleum Corp.'s recently assembled block of acreage in Townships 10-4 and 11-4, the block extending into the city limits of Shawnee.

The Five Civilized Tribes Indian Agency announces an oil and gas lease sale on April 25 of 94 tracts containing 7,700 acres. These oil and gas leases include seven in Creek County, three in Wagoner, one in Muskogee, two in Okmulgee, four in Okfuskee, 21 in Hughes, 26 in Seminole, two in Pittsburg, one in Marshall, two in Jefferson, 14 in Stephens, one in McLain, one in Coal and nine in Pontotoc Counties.

Wildcat tests in Logan County attracting attention include the Shell Petroleum Corp. and others' No. 1 Faulkner, C SE NW, Section 11-15-4w, which was drilling around 1,600 feet on a unitized block of 1,440 acres, and Gypsy Oil Co. and others' No. 1 McConnell, C NE SE, Section 28-17-4w, which was rigging.

The Indian Territory Illuminating Oil Co. has recently assigned a one-half interest in a 3,000-acre block of acreage in Townships 6-10w and 6-11w, Caddo County, in the southern part of the county east of the Cement Field.

In the old Roxana Pool, in Logan County, where a dry hole was recently found in the School Land sand, two old producing wells were being drilled deeper from the Wilcox sand to the School Land zone. They are the Shell Petroleum Corp.'s No. 9 McCulley and the same company's No. 1 Story, both in Section 30-19-4w.

Potential Tests Started

The Oklahoma Corporation Commission ordered potentials on all Wilcox sand wells in the Oklahoma City Field, to start April 17 at 7 a. m., and one week later all the wells producing from the Simpson sand zone and fault line zone will be opened to production on a daily ratable basis. This will mark the reopening of the Oklahoma City Field, where the Wilcox sand wells were shut in on April 1 and the Simpson sand wells on April 5.

The commission also ordered a general hearing on April 26 to determine the oil situation in all flush areas in the State. Testimony will be heard on the question of shutting down all the other flush fields in Oklahoma until potential tests can be made and new proration rules and regulations devised.

These actions were announced at the commission's hearing on April 13 after a day and a half of listening to suggestions on how to take potentials in the Oklahoma City Field.

The testimony presented at this hearing showed that unless the potentials are taken before the regular production is resumed there will be an enormous waste of gas, and that the operators in the field will suffer for revenue should the field remain shut down longer. The testimony further showed the need of establishing a gas-oil ratio for all wells in the field as a conservation move. Some action may be taken at the meeting of April 26.

Knowlton Continues Testimony

During the day and half hearing it was brought out that the waste of gas reduces the oil recovery in the Oklahoma City Field. It was estimated by Don Knowlton, engineer of the Phillips Petroleum Co., that the remaining recoverable oil under natural flow from the Oklahoma City Field was 11,000,000 bbls. which is less than three months' flow under a daily allowable of 150,000 bbls.

The commission was seeking evidence on which to base its potential order for reopening the field. The taking of evidence was started after the commission had proclaimed its rules and regulations and procedure in all oil and gas matters as required by the new proration law.

Champlin Refining Co. sought to have longer than a four-hour flow on all the Wilcox sand wells in the Oklahoma City Field, but the testimony showed that it would be impossible because there was not enough tankage available in the field.

The testimony showed that after the 11,000,000 bbls. of oil has been recovered the wells will be put on the air-gas lift or on the pump. This might be forestalled and a greater amount of oil recovered by cutting down the high gas production which has been coming from the Oklahoma City Field during February and March. It was also suggested at the hearing that potentials be taken at once and that the operators be given assurance that this will be the last open flow test.

Don Knowlton said that if the operators knew that this would be the last open-flow potential they would tube their wells and make other adjustments necessary to the continuous operation of their wells. This work will not be done if the operator knows that he will be required to pull tubing and work over the well several times a year to take potentials.

It was urged at the hearing that open flow potentials be taken at this time so

The Oil Man's Calendar

April

20-21 — Cleveland, Ohio, National Petroleum Association, Cleveland Hotel.

24—Western Pennsylvania Petroleum Marketers Association, Webster Hall, Pittsburgh, Pa.

24—Credit Association of Western Pennsylvania, William Penn Hotel, Pittsburgh, Pa.

May

15-16—San Antonio, Tex., National Oil Scouts Association, Plaza Hotel.

15-16-17—Tulsa. Natural Gasoline Association of America, Mayo Hotel.

17-18-19—Tulsa, American Petroleum Institute Mid-Year Meeting. Mayo Hotel.

18-19—Roanoke, Va., Virginia Oil Men's Association, Patrick Henry Hotel.

22-23—American Gas Association, Joint Committee Conference of Production and Chemical Committees, Hotel New Yorker, New York.

22-28—Houston, Tex., Oil Equipment & Engineering Exposition, Convention Hall.

June

2-3—Bradford, Pa., National Petroleum Association, Fire Marshals.

8—National Automobile Chamber of Commerce, New York.

12-16—Chicago, Ill., tenth annual meeting, American Oil Burner Association. Stevens Hotel.

25-30—Chicago "Engineering Week" sixth Midwest Engineering and Power Exposition.

26-30 — Chicago, Ill., annual meeting, American Society for Testing Materials, Stevens Hotel.

July

19-25—World Petroleum Congress, Imperial College of Science and Technology, South Kensington, London, England.

22-29—Washington, D. C., International Geological Congress.

September

20-22—Atlantic, City, N. J., National Petroleum Association, thirty-first annual meeting, Traymore Hotel.

25—Chicago, Natural Gas Department, American Gas Association.

October

24-26—Chicago, Ill., fourteenth annual meeting, American Petroleum Institute.

December

4—New York, Fourteenth Exposition of Chemical Industries, Grand Central Palace.

that fictitious potentials be reduced and a basis established for future production.

Big Waste of Gas

The testimony showed that tests on 20 wells in the Oklahoma City Field proved they had an aggregate gas production of 8,000,000,000 feet with their oil output and that half of this amount was wasted under the present system of flowing the wells and under the present potentials.

A. V. Hoenig, vice president of the Indian Territory Illuminating Oil Co., in charge of production, said that the pressure had gone off the Simpson sand zone to a point where the gast lift was necessary on many of the wells. Under the present price of crude oil and the method of operations, some of the wells are just paying overhead costs.

Don Knowlton testified again that to his knowledge there was no gas being wasted in the Santa Fe Springs Field or in the Kettleman Hills Field in California. That State has a gas-oil ratio law, which provides that the blowing of gas into the air is evidence of physical waste.

Charges Fictitious Potentials

Howard Hoops, attorney for the Westage Oil Co., said he had been advised that secret pipe lines frequently had been laid to tank batteries from other wells when potentials were being taken, so that the tested wells would show a greater potential than they really had. He asked the commission to force all the operators in the Oklahoma City Field to uncover or unearth all pipe lines to tanks.

W. L. Murphy, attorney for Wilcox Oil & Gas Co. and others, asked the commission to open the Oklahoma City Field on April 15 and permit the regular production until the first of May and start potentials then.

His reasons for reopening were that operators do not have time to run their allowable for the month of April. Repressuring by the shutdown has given an advantage to the old oil wells and is unfair to the new wells and that the required 10-day notice on orders has not been given and that the shutdown has violated Section 6 of the new proration law which prohibits cutting allowable of a well below 25 bbls. a day.

Chairman Paul Walker and E. R. Hughes voted together to start potentials on April 17.

Oklahoma City Runs and Shipments

Oil production and pipe line shipments exceeded quotas for the month of March, from the Oklahoma City Field. The reported production for March was 5,124,033 bbls., this is 103,589 bbls. in excess of the allowable as fixed by the Oklahoma Corporation Commission. During the same time the pipe line shipments reported 5,227,624 bbls. as shipped from leases, which is 786,307 bbls. in excess of the allowed production. The total crude oil in storage in the field on April 1, according to the military proration department, was 788,138 bbls., which, compared to 891,729 bbls. on March 1, indicated a withdrawal of 103,591 bbls. from storage during the month.

Estimates made on the unreported oil for the month will be approximately 40,000 bbls. daily for the 21 days the field was permitted to produce. During the month of March an executive order closed the production in the field for a period of 10 days because of the huge withdrawals of oil and the waste of natural gas.

The pipe line shipments for the first 12 days of April, show an average of 76,912 bbls. daily, part of this oil coming from storage. It is expected that the pipe line companies will increase their shipments in order to permit the operators in the field to have as much empty storage as possible available for the potential tests which started on Monday, April 17, from the Wilcox sand zone.

During the shutdown of April the production from the Oklahoma City Field has been averaging around 23,000 bbls. daily, all of the crude oil coming from wells that are making 10 per cent or more water of which there are 108 Simpson sand wells and 4 Wilcox sand wells.

Rules of Potential Tests

Rules and regulations were completed Saturday for taking potentials in the Oklahoma City Field. Work is to start Monday and some operators made application for the potential tests several days in advance.

It was planned by the commission to take potentials on 60 wells a day in the Oklahoma City Field, using the entire force of deputies provided under the new law. At that rate it was estimated the work can be completed in about eight days.

The proration department will designate a deputy umpire as an official witness and the offset owner will be permitted to witness the test. Operators will be requested to file applications for the taking of potential tests 24 hours in advance, so that the time and witness can be arranged.

Accompanying each application must be an affidavit that there are no false or secret connections to either the wells or tanks, which would permit the transfer of oil from one well to another during the taking of potentials.

During the four-hour open flow tests the natural gas must be gauged or measured and these measurements must be noted on the report of the potential of the well together with the amount of water the wells are making.

The regulations state that in designating the wells to be tested the umpire will attempt to prevent two wells within a distance of 675 feet producing at the same time. This will be done to prevent drainage.

Tests are to start each morning at 7 o'clock and each afternoon as soon after 1 o'clock as possible the potentials of the wells will be announced at the umpire's office.

Should all of the wells not be gauged for potentials before the beginning of the next proration period, May 1, those not gauged will be required to shut in until a test can be made while the others may resume regular production.

The Simpson sand and the fault line zones will be opened to ratable daily production on April 24, while the hearing to establish rules for taking potentials on these wells will be held before the Corporation Commission April 26.

Hearing has also been set for April 26 to determine rules and regulations for taking potentials in the other prorated areas in the State and to determine whether proration is necessary in all of the other flush fields in the State.

Atoka County

George and others' No. 1 Redden, SW cor. NE SW Section 19-1-15, was dry and abandoned at 640 feet.

Creek County

J. E. Crosbie's No. 4 Escoe, SW cor. Section 26-18-8, is a location. B. Swift and others' No. 1 Fixico, NW cor. SE Section 1-18-8, made 25 bbls. from 2,404-18 feet.

Carter County

Dapfine Oil Co.'s No. 3 Majors, SW cor. NE SE Section 25-1s-3w, is a rig. Trevelyn Oil Co.'s No. 2 Majors, NW cor. NE SE Section 25-1s-3w, is a location.

Hughes County

Oliphant and others' No. 2 Narcomie, NW cor. Section 14-7-8, was spudding. Manahan and others' No. 3 Tiger, SE cor. NW SW Section 10-7-8, was spudding. Boetcher Oil & Gas Co. and others' No. 3 Jacobs, NW cor. SE SE Section 9-7-8, is a rig. Same company's No. 2 Jacobs, SE cor. Section 9-7-8, made 168 bbls. from 2,896-2,920 feet. O. Tilley's No. 1 Walker, SE cor. NE NW Section 22-7-8, made 60 bbls. from 1,173-1,206 feet.

Noble County

Shell Petroleum Corp.'s No. 1 Farr, C NE SE Section 19-20-2w, is a rig.

Oklahoma County

Wirt Franklin Petroleum Corp.'s No. 1 Miller, C NW SW Section 35-12-3w, made 154,000,000 feet of gas from 6,300-6,465 feet.

Osage County

Gray and Folsom's No. 1, SE cor. SW Section 27-21-9, is a location. R. L. Craig's No. 6, SW cor. NW NE Section 8-22-11, is a location. Lewis Production Co.'s No. 2, C SW SE NE Section 28-24-7, made 168 bbls. from 2,598-2,689 feet.

Pottawatomie County

Oklahoma Oil Corp. and others' No. 1 Myah, NW cor. SE Section 28-7-4, was dry and abandoned at 4,241 feet. Huckleberry and others' No. 1 Sparkman, NW cor. Section 35-8-4, was dry and abandoned at 4,315 feet.

Pontotoc County

Delaney's No. 1 Norris, SE cor. NW NE Section 25-2-6, is a location. Same operators' No. 1 Richards, NW cor. SE Section 30-2-7, was completed for 50,000,000 feet of gas from 1,621-47 feet, total depth 1,700 feet. Mason and others' No. 1 Gardner, SW cor. NW NW Section 28-5-5, was dry and abandoned at 2,684 feet. H. & M. Drilling Co.'s No. 1 King, C NW SE Section 32-5-8, was dry and abandoned at 840 feet. Hughes and others' No. 1 Norris, C N L NE SE Section 28-4-7, was dry and abandoned at 700 feet.

Pittsburg County

Independent Drilling Co.'s No. 1 Scott, NE cor. SW SW NE Section 22-2-15, was drilling at 65 feet.

Seminole County

Southern Oil and others' No. 1 Mitchell, SW cor. Section 9-9-6, is a location. Hisson Drilling Co.'s No. 1 Carolina, NW cor. NE Section 32-9-6, is a location. Stanolind Oil & Gas Co. and others' No. 1 Palmer, NW cor. Section 36-6-7, was completed for 2,525 bbls. from 4,040-51 feet.

Stephens County

Pace and others' No. 7 Dilley, SE cor. SW NW SW Section 22-2-7w, is a location. Bridwell Oil Co.'s No. 1 Weldon, NE cor. SW SW NE Section 12-3-8w, was dry and abandoned at 2,300 feet.

Wildcat Operations in Oklahoma

Northern Oklahoma

ALFALFA COUNTY

Company, farm and location— Remarks:

Acre et al's No. 1 Acre, C SW NE Sec. 14-24-11w..... O.W.D.D.; T.D. 5,502 ft; C.O.

CADDO COUNTY

Denver P. & R. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-10w ..... Drlg. 7,525 ft.

COAL COUNTY

Dodd & Burton's No. 1 Grigsby, NW SE NE Sec. 25-1-8.. Drlg. 1,855 ft.

CREEK COUNTY

Sinclair Prairie Oil Co.'s No. 1 Tibe, SW SE NW Sec. 29-14-7 ..... Drlg. Wilcox 4,194-4,227 ft; show heavy oil.

O. O. Owen's No. 1 fee, NW cor. Sec. 23-15-7 ..... Wilcox 3,992-98 ft; wtr.; P.B. to 1,800 ft.

GARFIELD COUNTY

Continental Oil Co.'s No. 1 Thompson, NW SW SW Sec. 7-24-4w ..... R.U.S.T. 5,529 ft.

HUGHES COUNTY

Dixie-Lee Oil Co.'s No. 1 Taylor, C NW Sec. 37-5-10..... Spudding.

Redwine et al's No. 1 Ellis, C NW .NW Sec. 9-5-11..... Drlg. 1,700 ft.

KAY COUNTY

Blauner et al's No. 1 Maple, NE NW SE Sec. 20-27-4.... Spudding.

KIOWA COUNTY

McWhirter et al's No. 1 Vanderneck, NE NW Sec. 3-7-19w (O.W.D.D.) ..... C.O. 2,035 ft.

LOGAN COUNTY

Shell Pet. Corp.'s No. 1 Faulkner, C SE NW Sec. 11-15-4w Drlg. 1,310 ft.

MURRAY COUNTY

A. E. Harden's No. 1 Sadler, NE Sec. 19-1-2..... Rig.

NOBLE COUNTY

Shell Pet. Corp. 's No. 1 Farr, C NE NE, Sec. 19-20-2w.. Drlg. 4,234 ft.

Sinclair Prairie's No. 1 Jerome, SW cor. Sec. 15-20-2w.. Drlg. 5,144 ft.

Rollins et al's No. 1 Frank, SE SW Sec. 6-20-2w..... Rig.

OKFUSKEE COUNTY

Natl. Investers' No. 1 Billy, SE NW NW Sec. 29-12-9.... Drlg. 1,595 ft.

PAYNE COUNTY

Kemp & Nunnelee's No. 1 Crane, SW SE SW Sec. 10-17-6 Rig.

PONTOTOC COUNTY

Hughes et al's No. 1 Norris, CNL NE SE Sec. 28-4-7.... Dry and abd; T.D. 700 ft.

Gilbert's No. 1 Starritt, NW SE Sec. 23-4-6..... Drlg. 275 ft.

Choctaw O. & G. Co.'s No. 1 Thompson, SW NE SW Sec. 1-1-7 ..... Spudding.

Blackwell O. & G. Co.'s No. 1 Abbott, NW SW NE Sec. 14-4-6 ..... Sand 1,542-90 ft.; T.D. 1,710 ft.; to P.B. to 1,190 ft; C.O.; U.R. 10-in. csg.

W. E. McGraw's No. 1 Mayhue, NE Sec. 19-2-6..... Rig.

Williams' No. 1 Kroth, NE SE Sec. 33-3-4..... Drlg. 1,710 ft.

Wirrick's No. 1 Lee, SE SW Sec. 29-2-7 ..... Drlg. 410 ft.

POTTAWATOMIE COUNTY

Payne Drlg. Co.'s No. 1 Lovelace, NW SW NW Sec. 27-6-4 Drlg. 1,730 ft.

SEMINOLE COUNTY

Armstrong et al's No. 1 Diamond, NE SE SW Sec. 5-6-7.. Rig.

English et al's No. 1 Harjo, NE SW Sec. 3-8-8..... Fishing 676 ft.

Donnelly et al's No. 1 Shepard, SE NE Sec. 4-8-8 ..... Sand 1,395-1,405 ft; wtr.; fishing 1,640 ft.

Harris-Hays' No. 1 Harjo, NE SE NW Sec. 11-6-6..... T.D. 2,910 ft; P.B. to 2,791-2,-805 ft; 50 bbls. oil.

Stanolind-Amerada's No. 1 Palmer, NW Sec. 36-6-7..... Wilcox 4,040-51 ft; comp. 2,525 bbls.

Southern Oklahoma

ATOKA COUNTY

George's No. 1 Redden, SW NE SW Sec. 19-1-15 ..... Abd. 640 ft.

L. E. Stewart et al's No. 1 Stewart, SE SE Sec. 2-4s-10 .. Drlg. 1,545 ft.

CARTER COUNTY

E. M. Boring's No. 1 Morgan, C NE NW SW Sec. 4-1s-3w. Showing 12,000,000 ft. gas 2,038 ft; C.O.; set 8-in. 1,795 ft.

JEFFERSON COUNTY

Abbott et al's No. 1 Simmons, NW cor. Sec. 14-6s-6 ..... Drlg. 530 ft.

Hobbs' No. 1 Barnett, NE SE SW Sec. 32-5-5w..... Drlg. 300 ft.

Wakefield's No. 1 Kelly, NW SE Sec. 1-5-8w..... Drlg. 450 ft.

MARSHALL COUNTY

Thomas' No. 1 Setliff, SW SE SE SW Sec. 36-5-6..... Drlg. 1,110 ft.

STEPHENS COUNTY

Bridwell Drlg. Co.'s No. 1 Wellan, NE SW SW NE Sec. 12-3-8w ..... Dry and abd. 2,300 ft.

Doyle Oil Co.'s No. 1 Cunningham, SE NE NW Sec. 4-1-6w ..... Drlg. 410 ft

Navajo O. & G. Co.'s No. 1 Martin, SE SW NW Sec. 18-1-5w ..... Rig.

TILLMAN COUNTY

Emenheser et al's No. 1 Pace, C SW Sec. 3-4s-17w..... Drlg. 2,200 ft.

Gypsy Oil Co.'s No. 1 Pitcher, NW Sec. 26-4s-15w..... Drlg. 2,405 ft.

MARINE TERMINAL LINE

SAN FRANCISCO, Cal., Apr. 17.—The Associated Oil Co., 79 New Montgomery Street, San Francisco, awarded the contract at $6,450 to construct approximately 2,000 feet of 16-inch pipe line at the Associated Oil Co.'s marine terminal on the shore of Monterey Bay to Haviside Co., Inc., 56 Steuart Street, San Francisco.

New Pools Essential to Kansas Where Potentials Have Dropped Alarmingly on Recent Tests

By W. A. SPINNEY
Staff Correspondent, Kansas Fields

Recent potential tests have shown such an alarming drop in the potential production of wells in the newer Kansas pools that it will not be long until there will be an old-fashioned scramble for connections in Kansas, necessitating a wholesale drilling of new tests to open pools and keep the State's record up to its long-time average. Kansas has never been a very large producer of oil, but it is one of the most consistent producing divisions in the United States. For more than 15 years the State has averaged around 100,000 bbls. per day beginning with the discovery of the big pools in Butler County in 1917. Since that time pools have been opened in Greenwood, Woodson, western Elk, Cowley, Sumner, Sedgwick, Marion, McPherson, Chase, Coffey, Lyon, Ellsworth, Stafford, Kingman, Barton, Ellis, Rooks, Rice, Trego, Russell, Reno and Edwards Counties, the discoveries coming in such a way as to keep the production of the State between 80,000 and 120,000 bbls. a day.

The most active district in the State is the area between the Hollow Field in Harvey County and the Mabee Pool in McPherson County. At this writing there are 12 wells drilling in the area.

The Twin Drilling Co. has purchased the W half NE Section 25-19-2w, in the Ritz-Canton-Decker Field, from the Phillips Petroleum Co. This 80-acre tract has one well producing from chat with a potential of 53 bbls. a day. The well is now being reconditioned.

In an 18-hour test the Hunton lime well in the North Hollow Pool, district of Harvey County, the Derby Oil Co., in Section 17-22-3w, made 2,000 bbls. of oil. At this rate it would produce approximately 2,665 bbls. of oil in 24 hours.

Principal Pool Production

Production from the principal pools in the State for the week ending April 15, was as follows:

Pool—	Bbls.
Hollow	6,220
Ritz-Canton	23,305
Voshell	11,775
Sedgwick County	10,645
Mabee (Nikkel)	7,565
Ellsworth County	1,960
Barton County	675
Rice County	3,234
Stafford County	214
Reno County	1,785
Total	67,378
Others	54,022
Grand total for state	121,400

Hollow and Mabee One Pool?

Indications are that the recent extension wells in the north end of the Hollow Pool, in Section 17-22-3w, are higher on structure than the wells in the south where the discovery well was drilled. It is now believed that the northern part of the field will yield the largest wells yet found. The Derby Oil Co.'s No. 1 in Section 17-22-3w, is believed to be about 75 feet higher on structure than the wells about a mile south. The Derby Oil Co.'s well has been swabbing around 125 bbls. of oil an hour.

These extension wells are between the Hollow Pool and Mabee Pool and many express the opinion that the two will be joined by producing wells yielding production from the Hunton lime. The sixteenth well was completed in the Mabee Pool during the week. It was the Shell Petroleum Corp.'s No. 1 Voth, SW cor. NW, Section 4-21-3w, McPherson County, on the southwest edge of the area, and made 451 bbls. of oil the first eight hours from the Hunton lime at 3,499-3,506 feet. It is estimated at 1,400 bbls. a day.

The Mabee Pool now has a potential of 21,175 bbls. of oil from 17 wells. Lario Oil & Gas Co.'s No. 1 Koehn, SW cor. NW NW, Section 34-21-3w, is estimated at 1,500 bbls. a day from the Hunton lime at 3,450-56 feet.

Sinclair Prairie Oil Co.'s No. 1 Schroeder, in Section 5-22-3w, in the southwestern part of the Mabee Pool in Harvey County, was the seventeenth well to be completed in the Mabee Field. It was swabbing 10 bbls. of oil an hour from the Hunton lime at 3,518-33 feet.

Helmerick & Payne's No. 1 Russell, C NW NE, Section 23-19-2w, made 5,500,000 feet of gas from the chat formation at a total depth of 2,952 feet. The gas has been bradenheaded and the well will be drilled deeper to the Viola lime. The well is located in the southeast corner of the Decker gas area in McPherson County and is an offset to other gas wells.

Interesting Test

An interesting wildcat test was announced during the week, located about 3 miles southeast of the Voshell Pool, in McPherson County, and a similar distance northeast of the Mabee Pool in the same county. The test will be A. M. Scroggins and others' No. 1, SE cor. NE SW, Section 24-21-3w, on a block of acreage recently assembled. The block of acreage has been core drilled and is considered to be favorably located. Companies purchasing acreage in the block include Lario Oil & Gas Co., Continental Oil Co., Turman Oil Co. and The Texas Company. A. M. Landon owns a number of leases to the southwest from the Scroggins location.

The five wells in the Richardson district in Stafford County, which were permitted to produce 225 bbls. a day since the completion of the new pipe line into that district, were reduced to 50 bbls. daily on April 1.

The new pipe line to the Scheufler well in Section 9-20-11w, Barton County, has been completed and the well opened and permitted to produce 500 bbls. daily. The pipe line to this well is an extension of the line that runs west from the Schurr Field, in Rice County, to the Richardson area in Stafford County.

The pipe line to the loading rack west of the Richardson Pool in Stafford County, has been taken up. The line was used to move crude oil from the wells in the field to the Missouri Pacific Railroad and since the completion of the new pipe line it was not needed.

Big Fall in Potentials

State Umpire L. R. Pickrell, advises that the completed potential in the Ritz-Canton-Decker Field in McPherson County, showed a production of 37,242 bbls. from a total of 181 wells, compared to 90,410 bbls., the previous potential. The 72 chat wells in the field have a potential of 4,317 bbls. and the 109 Viola lime wells, a potential of 32,925 bbls. daily. This test was taken over a 48-hour period from April 1 to 3.

The nominations for the month of April show a decline in the deep sand area and the allowable production from this area effective April 1, is 54 per cent of the potential. The allowable production from the chat formation is the full capacity of the wells until further notice.

The umpire advises the corrected potential of the Voshell Pool, in McPherson County, taken April 5 to 7, for a 48-hour period, is 14,090 bbls. from 118 wells, compared to a previous potential of 20,345 bbls. Due to a decrease in nominations of more than 50 per cent of the largest purchasers in the district, the allowable production of the wells in the deep sand area is 46 per cent of their potential production. Nominations for the chat area are for full capacity production and producers are permitted to produce 100 per cent.

In the central western part of the State in the Siliceous lime areas all of the pools have been given an outlet except two. During the month of March, Slick, Pryor & Lockhart's No. 1 Orth, in Section 27-18-10w, Rice County, started producing after being shut in since its completion. Stanolind Oil & Gas Co.'s No. 1 Scheufler, in Section 9-20-11w, Barton County, was put on production April 1, after being shut in since its completion. On April 1, the Derby Oil Co.'s nomination of 800 bbls. a day in the Stoltenberg Pool of Ellsworth County, was withdrawn and this area will remain shut in until a market is secured for the oil.

The Johnson Field in McPherson County, which is producing from the chat, is permitted to continue to produce 250 bbls. per well with no change in the pipe line nominations. There are 17 wells in the area, producing 4,250 bbls. daily.

Acid Treatment

The use of acid treatment in wells in Kansas has brought some interesting results and increases in the amount of daily production from wells.

The Olson Oil Co. and others drilled a well in the Ritz-Canton-Decker Field that started making 25 bbls. a day. The well cost $25,000. The company was confronted with the problem of either plugging the well or making it produce enough to pay the cost of the drilling. It was decided to try the acid treatment and within a few days the well was making 1,440 bbls. daily.

The Shell Petroleum Corp. had a well in the Greenwich area of Sedgwick County, making 390 bbls. a day. Following the acid treatment it increased its output to 2,200 bbls. daily.

It is estimated that up to the present time more than 100 wells have been given acid treatment in Kansas, and it has enabled oil producers to convert small wells into good producing properties. When lime producing wells decline in output producers are using acid. In some cases the wells make more oil after the treatment than on their initial production tests.

Barton County

Slick Pryor and Lockhart's No. 1 Hogan, C SE NW Section 12-17-11w, is a rig. Same company's No. 1 fee, NE cor. SE Section 12-17-11w, made 100 bbls. from 3,142-3,214 feet.

Ellsworth County

Shawver and others' Nichols, NE cor. NW NW Section 28-17-10w, was dry and abandoned at 3,293 feet. Magnolia Petroleum Co.'s No. 1 Andrea, NW cor. SW Section 7-17-10w (old well drilled deeper), made 125 bbls. from 3,391-94 feet.

Greenwood County

Harwood and others' No. 1 Barnard, NW cor. SW Section 33-22-10, was dry and abandoned at 2,340 feet.

McPherson County

Eisen & Louer's No. 1 Kaufman, NE cor. SW SE Section 24-20-3w, was spudding. Roland and others' No. 1 Thomas, NE cor. SW Section 26-19-2w (old well drilled deeper), lost the hole at 3,377 feet and was abandoned. Harris and Haun's No. 3 Overman, SE cor. Section

(Continued on Page 78)

Wildcat Operations in Kansas

(Descriptions are East unless marked otherwise)

BARTON COUNTY

Company, farm and location— Remarks:
Noble Drlg. Co.'s No. 1 Grant, SW SW Sec. 4-20-11w.... T.D. 3,362 ft; P.B. to 3,325-35 ft. to test.
Rankin et al's No. 1 Sooeg, C SW NE Sec. 34-18-12w... Drlg. 2,750 ft.

ELK COUNTY

J. Hayes' No. 1 Palmer, NE NW Sec. 36-31-10..... Drlg. 850 ft.

ELLSWORTH COUNTY

Rex Etnyre's No. 1 Arasman, C SW SW Sec. 10-15-7w.. Rig.

GRAHAM COUNTY

Schleimeyer et al's No. 1 Smith, SE Sec. 24-8-25w..... Drlg. 4,180 ft.

GREENWOOD COUNTY

Reeser & Chriswell's No. 1 Wright, C SW SW Sec. 28-25-10 ..... Spudding.
Reeser & Chriswell's No. 1 Buyer, C SW SW Sec. 28-26-10 ..... Spudding and S.D.
Wright's No. 1 Madren, SW SE SW Sec. 29-22-12..... Machine.
Knight et al's No. 1 Moser, NE SW SW Sec. 33-22-12.. Machine.

MARION COUNTY

Farrell et al's No. 1 Williamson, C NW SE Sec. 21-19-4.. T.D. 2,942 ft; dry and abd.

McPHERSON COUNTY

Darby Pet. Co.'s No. 1 Bruckey, NE NW NE Sec. 24-19-1w ..... Drlg. 1,755 ft.
Gaume & Maxwell's No. 1 Goering, NE SW SW Sec. 24-23-3w ..... Rig.
Investers Mineral Dev. Co.'s No. 1 Kaufman, SE Sec. 35-21-3w ..... Rig.
Lario O. & G. Co.'s No. 1 Wilke, C SE NE Sec. 34-20-4w. Drlg. 3,791 ft.
Roth & Farout's No. 1 Swanson, NE SW NE Sec. 13-19-3w ..... Rig.
Shawver et al's No. 1 Nichols, NE NW NW Sec. 28-17-1w. T.D. 3,293 ft; dry and abd.

PRATT COUNTY

Ninnescah O. & G. Co.'s No. 1 Hardesty, SW SE SE Sec. 28-27-11w ..... Drlg. 3,920 ft.

RENO COUNTY

Roth & Farout's No. 1 Yoder, C NW NW Sec. 15-24-5w.. C.O. 325 ft.

RICE COUNTY

Langston et al's No. 1 Wells, NE SE Sec. 4-20-9w..... Drlg. 1,170 ft.

ROOKS COUNTY

Kruger's No. 1 Rathburn, SE NW SW Sec. 14-9-16w..... Rig.

SALINE COUNTY

Dister, Warren and Lario O. & G. Co.'s No. 1 Fulton, SW NW Sec. 14-16-3w ..... Drlg. 2,852 ft.

STAFFORD COUNTY

Atlantic Oil Prod. Co.'s No. 1 Gates, NW SE Sec. 27-21-13w ..... Drlg. 3,110 ft.

SUMNER COUNTY

Deal O. & G. Co.'s No. 1 Tompkins, SW cor. Sec. 26-33-1. Drlg. 1,965 ft.

WOODSON COUNTY

J. Cooper's No. 1 Quigley, SW SE SE Sec. 15-25-14..... Drlg. 410 ft.

Good Showing Found in Bee County Wildcat; Several Southwest Texas New Locations

By B. D. STEVENSON
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Apr. 17.—With the exception of the good showing of oil in a new sand in Humble Oil & Refining Co.'s No. 1 Imogene Hall in Bee County, a wildcat, the past week was almost devoid of any unusual features. The biggest factor was probably the announcement of a number of new locations and the spudding in of some new tests.

In the Saxet Field in Nueces County some of the new tests to the 4,800-foot sand were past that depth without being reported as big producers.

Humble's No. 1 Imogene Hall, mentioned last week, got 22 feet of sand around the top of the Jackson formation but continued to drill deeper aiming at the Pettus sand which should be found around 4,000 feet. The test is a little southwest of the Pettus Field. The 22 feet of sand at 2,754-76 feet was not anticipated and the tools went through it with full size hole, leaving no means for a drill stem test. The showing in the ditch was good and if it fails to make a well in the lower sand will probably plug back to the upper new sand and set casing. However, it gives drillers something new in that territory to watch for when they drill wildcats from this on.

Nueces County

In the Saxe Field in Nueces County the active deep tests are grouped around the Gibson Oil Co.'s No. 1 Rand Morgan, completed some weeks ago for a big well. This is 2 miles southwest of another group of 4,800-foot tests and 4 miles southwest of still another, and is at the southwest end of the field.

Gibson Oil Co.'s No. 2 Rand Morgan, north offset to No. 1, cored a sand at 4,871-77 feet which was about the depth of the production in No. 1, but it failed to show up satisfactorily and make a well. Drilling was resumed and the last reported depth is 4,949 feet.

Gulf Port Oil Co.'s No. 1 Rand Morgan, south offset to Gibson's No. 1, made about the same sort of history as Gibson's No. 2 Rand Morgan. It got a sand at 4,858 feet which was high and it looked promising and set casing nearly a month ago and has been working ever since with it but without success and finally started drilling deeper and was last reported at 4,905 feet and drilling.

Gulf Port's No. 3 Frank Bliss, east of Gibson's No. 1 Rand Morgan, topped a sand at 4,867 feet and cored it and tried to get a test but seems not to have got anything very encouraging and was drilling at 4,888 feet, looking as though it may not be so good.

This is repeating the history of the 4,800-foot sand at the north of the field where there are two big wells offset by dry holes. The first of these was Violet Oil Co.'s No. 1 McGregor completed several months ago. Houston Oil Co. drilled a couple to that sand, one an extra big nice well but Violet Oil Co. offset its own producer on the north with a dry hole and Shasta Oil Co. offset it on the south with a dry hole.

Three or four miles east of these there is one producer in sand at about 4,880 feet which makes that sand look rather spotted.

John F. Camp's No. 1 King, in the western part of Nueces County, in the new King Field he discovered, which consists at this time of two producers, the first and only tests drilled, has erected derrick but will not be drilled until Camp's rig on Stoneleigh No. 1 Terrell in Victoria County is released by the completion of that test.

Duval County

In Duval County, William B. Stewart's No. 1 Duval County Ranch Co., in Survey 362, failed to produce when drilled in and swabbed with total depth 2,310 feet in the Government Wells sand. This was the well that blew in while attempting a drill stem test and ran wild for a time making considerable gas and water but bailed down entirely dry after setting casing, no gas, oil, water or anything. The owners have not given it up but are pulling the liner and will core again and make another effort to make a well out of it. No. 2, three-quarters of a mile southwest, that indicated about 8,000,000 feet of gas on drill stem test before setting casing, is waiting for the completion of No. 1 when it will be drilled in. It was stopped in the Cole sand topped at 1,557 feet.

In the wildcat play up through McMullen County both Shumway's No. 2 Shiner and S.R.C. Oil Co.'s No. 1 La Chusa have been abandoned, the latter at 3,012 feet, the contract depth. This leaves the lower part of McMullen County north of the North Government Wells Field with the Jacqua & Crow test at 2,380 feet with casing on the ground preparing to set and test a 10-foot sand and C. R. Pope's No. 1 A. C. Miles, several miles west down a few hundred feet and only well started.

Of the wildcatting in northern Duval County south of the McMullen County line, Newton's No. 1 Wood-Welder was abandoned at 2,617 feet and Wright & Wilson are moving in rig to drill on the same ranch in Survey 102. This brings the more active wildcats in northern Duval down to three, Whisenant & Trenchard's test in Survey No. 76, 4 miles west of North Government Wells, just nicely started, Ed Leach's test in Survey No. 264, several miles northwest of Government Wells Pool, and Smith & Hunter's No. 1 Olivares, at 3,240 feet, drilling 7 miles east of North Government Wells.

In the Shasta Pool, No. 1-B Peters failed to shut off water and has been plugged back still farther to a sand at 2,523 feet and No. 3 Peters is just starting to drill.

Webb County

Edwin M. Jones spudded and set surface casing on his deep well on the Callaghan ranch, 20 miles west of production in the Laredo district in Webb County, and from this time on this test will be a feature of the district as it is scheduled to go deep. It starts so far west of production that it will miss all the formations producing in the Laredo district and hence the markers of that district are all absent.

Two tests in the Laurel district, one Montex Oil Co.'s No. 1 Garcia & Villareal at 2,425 feet, and the other Sal-Mar Oil Co.'s No. 1 Vela at 2,565 feet and each drilling on the east side of the field, quite a little beyond production, were 300 to 400 feet below the sand depth of the field and were hopeless so far as that sand is concerned.

In the Moca Field, one well was being completed, the Whisenant & Trenchard, 1½ miles northeast of the field, down at sand depth at 903 feet, and one new test, Will Ohlhausen's No. 1 Moses Jones, southwest of the field, and just getting started, marks all the activity at present.

Balcones Fault

Humble's Serpentine Pool in southern Bastrop is not going to be as big as at first thought and the Riddle Pool near the southern line of the county is not looking so good. Two tests by Humble in its Hilbig Field were reported abandoned last week. This week No. 2 Wolfensbarger at 2,660 feet is in Serpentine topped at 2,534 feet but dry and it looks like a failure.

Late in the week Marts & Beaven's No. 1 Reyes was reported to have topped Serpentine formation in a wildcat location at 1,705 feet and was about 35 feet in and with no oil showing. Temporarily at least the Serpentine activity in the Balcones fault zone is quieted down.

Teas & Gant are thought to be in Eagleford at 7,186 feet in No. 1 Mikulec in Bastrop County south of Smithville. The contract called for Edwards lime or 7,000 feet but calculations were missed. After a short shutdown drilling has been resumed and it will go to the Edwards lime. It is at least adding a lot to the sum total of geologic knowledge of the district as there have been no tests that far east of the fault that have gone to the Edwards. There were no logs to go by in working out the geology of this test. A little east of the Salt Flats Field in Caldwell County and southwest of this test in eastern Bastrop there is a sharp dip in formations toward the Gulf which has long been known and probably extends up through Bastrop accounting for No. 1 Mikulec getting the formations much lower than it was first calculated.

With Paton Brothers working in a sidetracked hole in the test on the Turner farm in northern Lee County the interest in Edwards lime drilling shifts to the tests in Guadalupe and Caldwell Counties. There are four new ones: Magnolia's No. 1 Williams, southwest of the Darst Creek Field and playing for a pool on an extension of the Darst Creek Field; Buckley Brothers' No. 1 Howell, north of the river and 3 miles east of the south end of the Darst Creek Field, playing for a parallel structure to that of Darst Creek; Luling Oil & Gas Co.'s No. 1 Schuenemann, northeast of Seguin, all in Guadalupe County; and F. L. Thomson's No. 1 Lawler in Caldwell County, a little southeast of the northeast end of the old Luling Field and working for a structure parallel to the Luling Field.

There are two other centers of activity attracting some attention, one new though in an old territory. From the Jacobs Pool in northeastern McMullen County and extending northeast along the Atascosa-Live Oak County line is one. The wildcatting is for shallow production at around 1,000 feet and last week Duval Oil Corp. abandoned its No. 1 Border

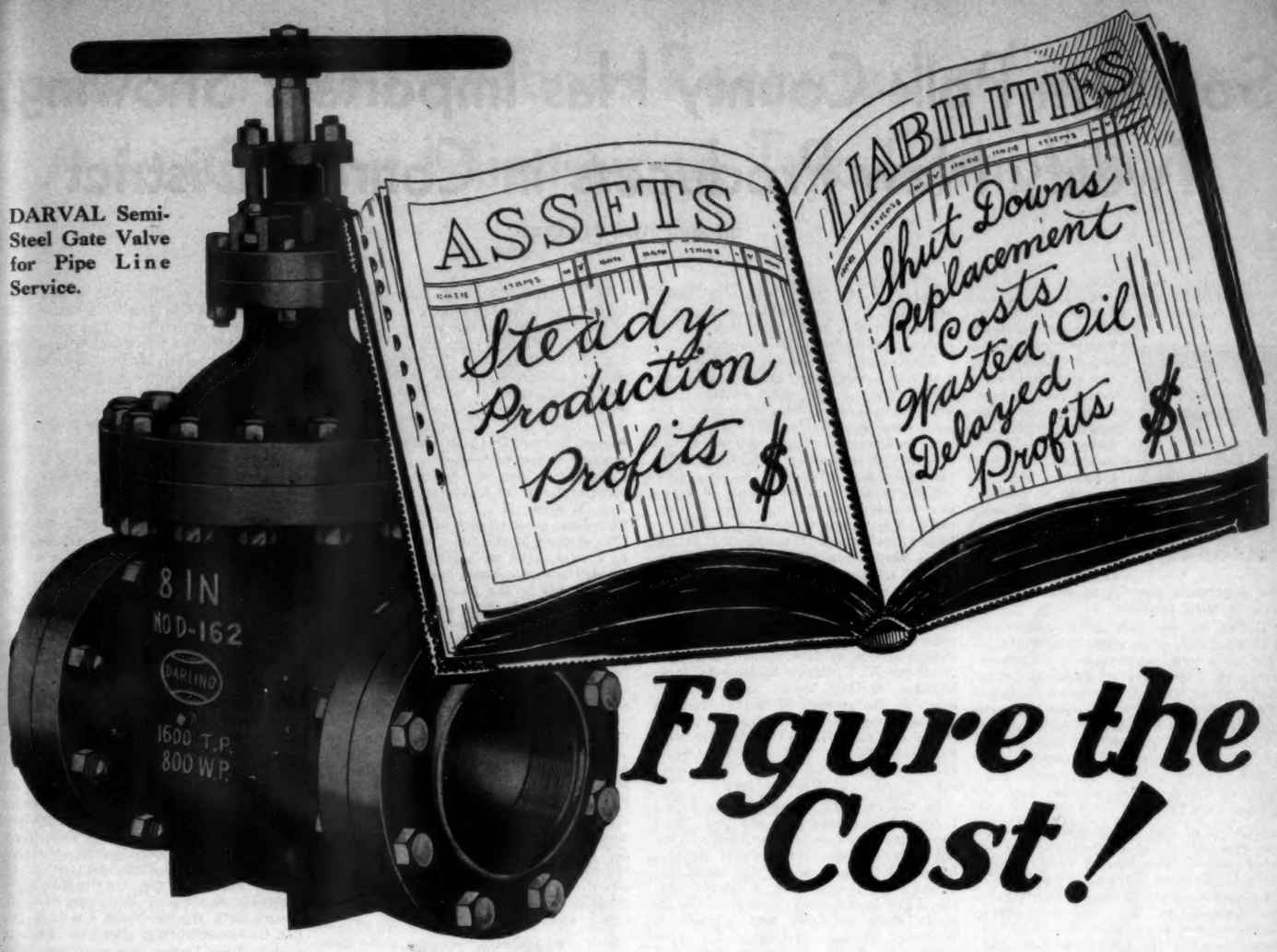
(Continued on Page 58)

Wildcat Operations in Southwest Texas

Week Ending April 15

Company, farm and location—	Remarks:
ATASCOSA COUNTY	
A. Blume's No. 1 Shaw, 690 ft. from N line, 1,780 ft. from E line of 100-ac. tract in W. Farquhar Sur. No. 275	T.D. 450 ft; drlg.
Jacob, Bussini & Pickett's No. 1 Schroeder, 160 ft. from N and W lines of 159-ac. tract in Frederick Anthony Sur.	T.D. 600 ft; drlg.
BASTROP COUNTY	
Champion's No. 1 Rivera, center W½ of 800-ac. tract in Osborne Sur.	T.D. 1,950 ft; drlg.
J. E. Emanuel's No. 1 H. Klemm, 817 ft. from W line, 300 ft. from S line of tract in R. S. Teal Sur.	T.D. 262 ft.; resumed drlg.
Marts and Beavens' No. 1 Reyes, 750 ft. from W line, 150 ft. from S line of 68-ac. tract in Addison Lytton League	T.D. 1,150 ft; drlg.
C. C. Shumway's No. 1 J. W. Buckner, 2,350 ft. from NW line, 1,150 ft. from NE line of farm in Wm. M. Jenkins Sur.	T.D. 1,200 ft; drlg.
Teas and Gant's No. 1 Mikulec, 330 ft. to NW and SW lines of tract in Wm. Barton Sur.	T.D. 7,186 ft; S.D.
BEE COUNTY	
Humble Oil & Refining Co.'s No. 1 Imogene Hall, 1,315 ft. from SW line, 330 ft. from SE line of tract in Thomas J. Butler Sur.	T.D. 3,335 ft; drlg.
John O'Neil's No. 1 Plummer in NW part of county	T.D. 400 ft; drlg.
BEXAR COUNTY	
C. I. Albertson's No. 1 Vogt, 2,100 ft. from N line, 240 ft. from E line of 237-ac. tract in Sec. 2 of S. McCollough Sur. No. 53	Set surface csg.
Wm. V. Ballard's No. 1-A San Antonio Land & Dev. Co., 1,000 ft. from N line, 450 ft. from W line of tract in I. Perez Sur.	T.D. 1,017 ft; slopping over top of csg.
R. S. Boling's No. 1 J. J. Appelt, 150 ft. from N and W lines of tract in M. Uriegas Sur.	T.D. 830 ft; set csg.
E. R. Byrd's No. 1 W. H. Russell, 750 varas from NE line, 54 varas from NW line of Fernandez Rodrigues Sur.	T.D. 1,100 ft; reaming.
LaSalle Oil Co.'s No. 1 City Sewage farm, 150 ft. S of Rilling Road, 450 ft. W of NE cor. of tract in D. Bustillos Sur.	Spudded in.
Moter-Campbell's No. 1 Pruitt, 650 ft. NE of Trussell's No. 1 Pruitt, 84 varas from S line of tract in Samuel McCollough Sur.	T.D. 1,065 ft; changing to rotary.
Ethridge et al's No. 1 Bilharts, 150 ft. to N and E lines of SE 160 acres of Bilharts 360-ac. tract in F. Rolen Sur.	To be drilled by Moter-Campbell.
O. L. Ray's No. 1 Thos. Dillon, 2,500 feet from NW line, 1,750 ft. from most southerly SW line of de Luna grant in southern part of county	T.D. 600 ft; U.R.
J. Morgan Russell's No. 2 Brotze, 200 ft. W of No. 1, in Cordenas Sur.	T.D. 340 ft; drlg.
Earl S. Post's No. 1 Bilharts, 1,265 ft. from W line, 2,160 ft. from S line of 385-ac. tract in F. Rolen Sur. No. 48	T.D. 502 ft; drlg.
Sun Rise Oil Co.'s No. 1 R. J. Uecker, 150 ft. from N line, 450 ft. from W line J. M. Peres Sur.	T.D. 760 ft; testing.

(Continued on Page 61)



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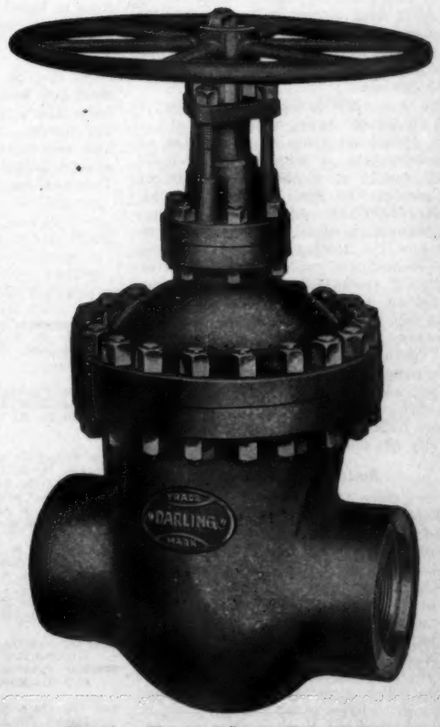

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Southern Polk County Has Important Showing; Twenty New Producers in Conroe District

By NEIL WILLIAMS
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Apr. 17.—The existence of important oil production in the Sunshine-Schwabb district of southern Polk County was definitely proved the past week by showings made in drill stem tests in Shell Petroleum Corp.'s No. 1 Davis & Holmes. As this is written the well has not been completed but casing has been cemented preparatory to bringing it in and apparently there is no doubt it will make a good producer.

Bottom of the hole is at 4,337 feet with sand topped at 4,283 feet. The last drill stem test was made at 4,326-34 feet with packer set at 4,308 feet. The well started flowing in seven minutes after the testing tool was opened. Through the one-half inch choke it registered a pressure of 200 pounds and changed to the quarter-inch choke it showed 390 pounds. It was closed in after seven minutes and 7-inch casing was set and cemented at 4,320 feet.

Location of this well is 330 feet south and east out of the northeast corner of the J. A. Munson 80-acre tract in the Mary C. Swinney Survey, the latter being a junior survey of the A. Viesca Survey. This places this well more than three-quarters of a mile southeast of Dick Schwabb's No. 1 Carlton-Davis, the discovery well, a wet gasser completed last October in the same horizon at 4,230-4,311 feet. Except to supply fuel requirements, the latter well has been standing shut in since its completion and has maintained a constant pressure around 1,575 pounds.

The discovery gasser and acreage of Dick Schwabb have been acquired by Shell Petroleum Corp. in completion of a trade, option on which was taken by Shell shortly after the bringing in of the gasser. The deal involved approximately $1,000,000. At the time the option was taken, Shell put up $25,000 to apply on the drilling by Dick Schwabb of a second test, which was designated as No. 2 Davis-Holmes. This test was located on a Shell lease, approximately 1,050 feet to the west and south of the discovery gasser. It was drilled to a total depth of 4,438 feet but, although it made some oil, water prevented its completion and after several attempts to plug off the water the hole was cemented back up into the casing and temporarily abandoned.

Active Lease Play

Ever since the completion of the Schwabb gasser, the area has been looked upon as an important oil field although general development has awaited the discovery of the first oil production. The failure of the secont test cutting the development off toward the west only served to strengthen the belief of the majority of operators that the field lay in an easterly direction, and since then there has been an active lease play in the latter direction with lease and royalty price bases being run up to those of proven territory. Some acreage changed hands for as much as $750 an acre, of which as much as $300 was paid in cash.

The field also is cut off to the southwest by the abandonment early this year of a wildcat drilled by Harrison & Abercrombie on the W. T. Carter & Brothers' land. This test, which was dry at a total depth of 5,500 feet, was approximately 2 miles from the discovery gasser.

Shell's well is in the Cockfield, in which the discovery gasser was completed. This is the same horizon from which the Conroe Field, 40 miles to the southwest, is producing although in Conroe the formation is encountered a little deeper with production at 5,100 feet. The two fields are believed to be very similar in general characteristics. Acreage, however, is more cut up than at Conroe and may necessitate even a more intense development than in the former field. Shell owns all the acreage immediately surrounding, most of this being acquired from Dick Schwabb prior to the drilling of the first well. Tide Water Oil Co. recently purchased a tract, approximately a mile southeast of the new well. Harrison & Abercrombie own nearly all the W. T. Carter & Brothers' large holdings farther south and east but much of the acreage is in the hands of smaller independents. Humble Oil & Refining Co. has a large block to the west and Sun Oil Co. and Gulf Production Co. have small leases but these seem cut off from the Schwabb play.

In this district, Roxie Oil Co.'s No. 1 Reed is an important key test. It is approximately 2 miles northeast of the Schwabb-Shell discovery gasser, location being 150 feet out of the northwest corner of the 479-acre lease, A. Viesca Survey. Late in the week it was drilling in sandy shale at 4,067 feet. Carlisle & Williams' No. 1 G. McDonald, 2½ miles northwest of the discovery well, and which also has been watched because of its key location, has been shut down at 4,035 feet and rig has been moved off.

Conroe

At Conroe the chief interest over the week-end was centered in Strake Petroleum, Inc.'s No. 1 Schaeffer, C. B. Stewart Survey, which was testing a sand and broken sand and shale formation at a total depth of 5,092 feet. A string of 7-inch casing was cemented on the formation at 5,025 feet and plug has been drilled and screen is being run. This well is located 5,000 feet due west of the nearest producer and beyond the outlined limits of the field and, if successful, will prove an additional 2,000 to 2,500 acres for Conroe, most of which is owned by Strake Petroleum, Inc., or G. W. Strake, individually, and will make Mr. Strake second to Humble Oil & Refining Co. in amount of proven holdings.

Operators also are watching the outcome of Harrison & Abercrombie's No. 3 Ben Wiggins, T. M. Wiggins Survey. This test, in the heart of the most prolific portion of the field, was dry down to a total depth of 5,159 feet and below where the sands should have been encountered. This is the first dry hole inside the limits of the field but it is believed the well cut a fault in such a way as to miss both the upper and lower sands entirely. The hole was plugged to 4,018 feet and whipstock set and a new hole now is being drilled out from the original hole in an effort to hit the sand.

Houston Oil Co. and Tide Water Oil Co.'s No. 5 Dobbins, Ransom House Survey, in which 15½-inch surface casing had been cemented at 310 feet, started blowing out around the outside of casing. Cement, however, was pumped around the casing immediately and the gas stopped and for the time being at least the hole saved and another crater prevented. The Dobbins lease adjoins to the south the Standard Oil Co. of Kansas' Madeley lease, the center of the Conroe crater area.

Twenty New Producers

Twenty new producers were reported for the Conroe Field the past week, these being confined largely to inside acreage. Drilling development reflected further curtailment in the main part of the field although some new activity started up on the extreme east side where proving of down-flank production of the upper gas sand is under way.

The daily allowable of 20-acre units has been cut, effective April 10, from 116 bbls. to 110 bbls., this being the regular 10-day period readjustment of schedules. The allotment was made on a basis of 322 producers as of that date. The new schedule is 4.5 bbls. per acre with a 20-bbl. base per well. Another Railroad Commission hearing for the Conroe Field is scheduled to be held at Houston April 20 when the question of a change in the present 35,000-bbl. maximum allowable will come up.

Rabbs Ridge

A new proration schedule also was issued, effective April 15, for the Rabbs Ridge (Thompson) Field, cutting the well allowable from 205 bbls. to 187 bbls. This was based on 88 completed wells, including wells expected to be brought in within the next 15 days.

Austin County

Cranfill-Reynolds Co. has made location for its second test on its block southeast of Bellville, Austin County. This test, No. 1 Swearingen, C. K. Hamm Survey, is southeast of the first test, No. 1 J. B. Lewis, Hacienda Survey, which was abandoned two weeks ago as dry at 4,514 feet.

Grimes County

Grimes County also seems due for some additional play. In the Yarborough area, Coch and associates have made location and are moving in for a test on a block leased by the Pure Oil Co. some time ago. This wildcat, No. 1 Haferkamp, is in the Samuel Fulton Survey. On the old Carlos prospect, Southwest Petroleum Co. is moving in a rig for No. 1 Greer in the Pat O'Connor Survey. Both the Yarborough and the Carlos prospects have been looked upon as likely territory.

Tomball Area

In the extreme northwest corner of Harris County on a block located west of the Tomball play, Sinclair Prairie Oil Co. is reported preparing to start a wildcat in the near future located in the Benson Survey. At Tomball, Magnolia Petroleum Co.'s two wildcats continued as two of the most watched wildcats on the Gulf Coast. This company's No. 1 Martens, Joseph House Survey, is down 3,624 feet, where a string of 9⅝-inch casing was set and cemented. The casing was run as a protection against possible blowouts. This company's No. 1 Kobs, lower Hooper Survey, is drilling below 1,700 feet.

Hull

Of particular interest to operators at Hull was the completion by Houston Production Co. of its No. 2 Baldwin, a semi-wildcat on the southwest side of the dome. This test apparently conquered the heaving shale problem, which has handicapped operations on that side of the dome, and drilled through 600 feet of that formation to be brought in as a good producer at a total depth of 5,437 feet. The well flowed initially at the rate of 3,500 bbls. daily through an inch choke. Reduced to a three-eighths inch choke it flowed at the rate of 1,600 bbls., but because of possible damage to the well it was opened to a three-quarter inch choke flowing at the rate of 2,600 bbls., 20 per cent water.

Barbers Hill

On the extreme south side of Barbers Hill, Chambers County, Mills Bennett Production Co. got a good well in its No. 2-C Gulf fee, which was completed in a sand at a total depth of 4,604 feet. The sand underlies a salt overhang encountered at 2,704-3,446 feet.

Gulf Coast Fields and Wildcats

Week Ending April 15

RACCOON BEND—AUSTIN COUNTY

Company, farm and location—	Remarks
Humble O. & R. Co.'s No. 5 Ollie Wilson, Wm. Harvey Sur., 2,491 ft. from NW line, 407 ft. from NE line	Drlg. shale 358 ft.

DAMON MOUND—BRAZORIA COUNTY

Sinclair Prairie Oil Co.'s No. 21-A Bryan, 155 ft. N, 45 deg. E of SW cor. of Blk. 28, Masterson Subd., and 140 ft. S, 45 deg. E, A. Darst Sur.	Salt 3,833-7,583 ft; T.D. 7,586 ft; drill pipe stuck.

MANVEL—BRAZORIA COUNTY

The Texas Co.'s No. 1 Davis, 250 ft. S 43 deg. W and 400 ft. N 46 deg. W out of E cor. of Lot 31, H. N. Little Sur.	Drlg. shale and lime 3,556 ft.
The Texas Co.'s No. 1 Natali, 300 ft. S 43 deg. W and 200 ft. N 43 deg. W out of E cor. of Lot 43, Div. E, Suburban Gardens Subd., H. N. Little Sur.	Drlg. shale and lime 4,882 ft.

BARBERS HILL—CHAMBERS COUNTY

Humble O. & R. Co.'s No. 2 Kirby, Henry Griffith League, 100 ft. W of E line of lease and 200 ft. N of No. 1	Cored sand showing oil 4,052-64 ft; to make D.S. test.
Mills Bennett Prod. Co.'s No. 2-C Gulf fee, Wm. Bloodgood Sur., 175 ft. N of No. 1	Set 94 ft. 7 inches screen 4,604 ft; comp. oil well.
Sinclair Prairie Oil Co.'s No. 11 Wilburn (D.D.), Wm. Hodges Sur.	Drlg. sandy shale 4,801 ft.
Sinclair Prairie Oil Co.'s No. 14 Wilburn, Henry Griffith League, 150 ft. W of No. 12	Cutting and pulling screen to deepen, 4,206 ft.
Sun Oil Co.'s No. 16 Wilburn, Henry Griffith League, 150 ft. W of No. 14 and 50 ft. N of S line	Drlg. salt 2,191 ft.
The Texas Co.'s No. 3 Lawrence fee, Henry Griffith League, 740 ft. W of E line in center of tract	T.D. in salt 5,278 ft; drlg. sidetracked hole in sticky shale 4,496 ft.
The Texas Co.'s No. 9 Wilburn, Henry Griffith League, 580 ft. E of NW cor. and 50 ft. S of N line	Drlg. sand and shale 3,500 ft.

(Continued on Page 62)

Fourteen New Locations Recorded in Louisiana, Arkansas and Mississippi; Two Completions

By D. H. BANCROFT
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Apr. 17.—Claiborne Parish and Converse district of Sabine Parish, Louisiana, shared the most interesting developments of the week in this territory. United Gas Public Service Co.'s No. 1 Meadows, Section 13-21-5, Claiborne Parish, ran drill stem test on 8 feet of sand at 4,918-26 feet and got water and is coring at 4,946 feet. Sandfield Oil & Gas Co.'s No. 1 Bowman-Hicks, NE NE Section 26-9-13, Converse, fished tools and one joint of drill stem out of the hole at 3,404 feet and was arranging to set liner after a show of an estimated 10,000,000 feet of gas with a spray of oil and salt water when it blew in with an estimated 20,000,000 feet of gas with no increase in the oil or water. The interesting feature of the Claiborne test is that the sand tested is deeper in the section than any other deep well so far drilled in that part of the country. The Converse well is 2 to 4 miles south and east of the three producers in the district.

Only two completions, both in Zwolle, were listed during the week. One of these, Service Drilling & Royalties Corp.'s No. 2 Smith, NE Section 18-7-11, was abandoned with some oil in the hole at 2,814 feet and the other, Zwolle Production Co.'s No. 1 Tatum, SW NE Section 25-8-12, was completed as a 300-bbl. flowing well at 2,375 feet after it had come in flowing, made 750 bbls. the first 10 hours and went dead.

Fourteen New Locations

Fourteen new locations were scattered all over the territory, three in Caddo Parish, two in Zwolle, one each in Catahoula, Caldwell and Vernon Parishes, rank wildcat territory, and in Nevada, Savier and Miller Counties, Arkansas; and one in Pearl River County, Mississippi. Simplex Oil Co. made location for No. 8 Youree-Robinson, NW SE Section 13-20-15, Caddo Parish. Nos. 1 to 6 were drilled by D. C. Richardson several years ago. Nick Barbare has derrick up for No. 1 Sharpe, NE NW Section 10-18-16, Blanchard gas district of Caddo Parish, and Louana Oil & Gas Co. is rigging up on No. 1 Sharpe, NW SW Section 11-18-16. Terrell and Price have staked location in the NW NE Section 18-11-3e, Caldwell Parish, for No. 1 Louisiana Central Lumber Co., and George Greer has derrick up for No. 1 Louisiana Central Lumber Co., 3,095 feet north and 1,930 feet west, SE cor. Section 2-9-6e, Catahoula Parish. Both are in line of the Conroe-Jackson trend recently so active in the lease play. E. R. Appleby has derrick up for No. 1 J. L. Scales in SE SE Section 35-13-12, DeSoto Parish, 10 miles or so east of Mansfield. Service Drilling & Royalties Co. is rigging up on No. 3 Smith, SW SW Section 7-7-10, Zwolle, and in the Converse area of Sabine Parish, Mamie S. Hammonds has derrick up for No. 1 Patrick heirs, SW SE Section 1-9-13, 2 miles northeast of Gibson-Johnson's second producer. In Vernon Parish, Talbert, Rowley and Dawson have location for No. 1 Long-Bell Lumber Co. in SW SW Section 2-1n-11. C. H. Lyons and others' No. 1 Stovall, NW SE Section 2-22-9, Webster Parish, is a derrick 2 or 3 miles west of Haynesville production.

Gulf Refining Co. is shooting its Minden, Webster Parish, block of 9,000 acres in Township 19, Range 8, just northeast of Minden, by way of rechecking previous magnetometer and torsion balance surveys two or three years ago. It is understood that while no definite drilling program has been adopted, if the results of this seismograph survey are satisfactory the company is prepared to drill to 7,000 feet. It is interesting to note that the Mat Moore well in Section 13-19-9, drilled by Hope Oil & Gas Co. about 12 years ago, was the lowest ever drilled in North Louisiana, finding the Nacatoch at 3,000 feet and abandoned at 3,300 feet. No one has ever been able to figure a drop of 700 feet on this horizon in a distance of 2 miles. Robinson & Greer have taken 8,000 acres of a 16,000-acre block in Catahoula Parish assembled by J. E. Winans, of Natchez, Miss., and will drill a 3,500-foot hole, as noted above, under the style name of George Greer in Section 2-9-6, around which their part of the block centers.

NORTH LOUISIANA

Mrs. A. L. Ibach's No. 1 Rambin, NE NE Section 32-11-11, DeSoto Parish, which threatened to be a commercial gasser two or three weeks ago but failed to produce according to the show at 2,964 feet and swabbed more or less 48 gravity oil at 3,054 feet, has reached contract depth of 3,527 feet and is shut down as a dry hole in shale waiting orders as to whether it will be drilled deeper. E. T. Oakes' No. 1 H. L. Bryant, NE NW Section 30-13-15, DeSoto Parish, was coring black shale and shell at 4,665 feet. E. J. Stanberry got a show of oil and gas at 1,408 feet on No. 1 Naborton Oil & Gas Co., Section 32-13-11, and is waiting for casing to be set for a test. Edwards and Clay were drilling what is supposed to be caprock at 2,380 feet on No. 1 Louisiana Pecan Orchard Co., NW SW Section 27-13-11, Red River Parish, and T. G. Shaw recovered swab lost in No. 1 Wilkinson, NE SE Section 4-12-10, Red River, and is waiting for standard rig to pump with 700 feet of oil in the hole from 2,730 feet.

Nick Barbare's No. 1 Ryals, NW NW Section 27-9-13, 2½ miles east and south of the Gibson-Johnson producers in Converse area of Sabine Parish, was dry at 1,550 feet, about where the first producer in the district made its show. It is 1¼ miles southeast of the Modisette producer in Section 20-9-13. Evans Brothers' No. 1 Cranford, SE SE Section 20-9-13, which made a head of oil half way up the derrick from 1,574 feet last week ran 2-inch tubing but would not flow. In Zwolle, Pugh-Hickman Drilling Co. abandoned No. 4 Blackman, NE NW Section 36-8-12, as a dry hole at 2,500 feet, offsetting their two producers on the same "eighty." Scully and Beach's No. 3 Lafitte, Section 13-7-11, is standing 1,500 feet in oil from 2,636 feet and will run tubing. Rush Smith's No. 1 Middleton, SE SE Section 26-8-12, was dry at 2,430 feet and has 600 feet of fluid in the hole from 2,558 feet and is waiting orders.

J. M. Moody, of El Dorado, Ark., has taken over E. S. Goen's No. 1 Frost-Johnson Lumber Co., and the 5,000-acre block it is on in Section 7-22-2e, Union Parish, and is arranging for a drill stem test at 2,092 feet. Wingfield and others' No. 2 fee, SE NE Section 6-1n-9, Union Parish, shut down at 2,100 feet February 15, resumed operations, drilled to 2,958 feet and is fishing for drill stem.

ARKANSAS

Jenkins Brothers' No. 1 Smith, SE SE Section 32-15-26, Miller County, Arkansas, reported last week as abandoned at 3,800 feet, is not abandoned but is shut down at that depth for the next 60 days or so while negotiations are under way to take it on down to 4,500 feet. A quarter of a mile west of the two Baker & McMurray producers, it was reported in Texarkana during the week that it had made a show of oil at the present depth. The Baker and McMurray wells are shut down due to lack of market for the oil at this particular moment. Duluth-Arkansas Oil Co.'s No. 1 Beck, NW SW Section 34-15-26, is plugging back from 3,100 feet to 2,932 feet to run a test where they got a small show of oil and gas; No. 1 Price, NW NE Section 18-16-25, 4 miles southeast of production is shut down at 3,470 feet. Roy Kniveton's No. 1 Barker, NW SE Section 31-17-26, was drilling salt water sand at 3,370 feet. Sam Riggs and others are moving in rig to drill No. 1 Boyce in Section 12-15-27. A. H. Bagnell spudded No. 1 Trottner and Rhinehart, Section 2-13-26, 4 miles northeast of Fulton, Hempstead County, and set one joint of surface pipe to preserve his leases. Sam Wilson cored sandy shale and lime at 2,763-68 feet on No. 1 Red River Lumber Co., SW SW Section 19-19-25, Lafayette County, and will run a drill stem test. Magnolia Petroleum Co. is reported to have leased all the Bodcaw Lumber Co. land in the vicinity of Stamps, Lafayette, County, for a deep test. Lewis and Hutcheson are rigging up for No. 1 Hart in Section 33-12-22, Nevada County, the first new test in that county since the Irma producing district was drilled up several years ago. R. E. Collins and others are rigging up to drill No. 1 Western, NE NE Section 15-10-29, Sevier County, around which they have a block of 13,000 acres. Location is in southwestern Arkansas, north of Miller County. F. C. Henderson cored salt water sand at 2,828-33 feet on No. 1 J. F. Sample, NW NW Section 1-18-16, in the northwest corner of old El Dorado production, and is shut down at 2,915 feet.

MISSISSIPPI

Ferguson-Fuller and others' No. 1 W. B. Montgomery, NW NW Section 26-6-1e, Hinds County, Mississippi, was fishing for drill stem at 2,479 feet and Lionel Petroleum Co.'s No. 1 J. L. Gaddis, a wildcat in Section 7-7-3w, same county, was drilling at 1,475 feet. Stauffer and Khouri abandoned No. 1 Bond, SE NE Section 18-2n-14, Lamar County, as a junked hole at 3,026 feet and skidded over to start a new hole. P. J. McAlpine's No. 1 Rye, Section 22-15-17, Monroe County, a quarter mile west of the first commercial well in Mississippi, a gasser completed during the winter of 1926-27, bailed dry in sandy lime at 2,709 feet after setting 6-inch and again at 2,718-37 feet. Mississippi Oil & Gas Development Co. set 207 feet of 8¼-inch surface pipe on No. 1 Adair, SE SE Section 36-21-3w, Sunflower County, and was drilling at 2,950 feet. Glassell and Smith have derrick pattern on location for No. 1 Himes Lumber Co. in Section 27-2s-14 Pearl River County, in the southeastern corner of the state, not far from the Gulf Coast.

Crude Oil Runs

Daily average runs from the field were practically stationary this week, the difference being a slight gain of 95 bbls. over last week's total of 61,045 bbls. Louisiana runs were 30,835 bbls., an increase of 105, and Arkansas' 30,305 bbls. was 10 bbls. under last week. Runs from the several pools averaged:

NORTH LOUISIANA

	Bbls.
Caddo light	5,045
Caddo heavy	1,635
Cotton Valley	625
DeSoto-Red River	1,740
Elm Grove	325
Haynesville	3,980
Holly	215
Homer	2,700
Pleasant Hill	295
Sarepta-Carterville	790
Urania	1,500
Zwolle	11,985
Total	30,835
Last week	30,730
Increase	105

ARKANSAS

Champagnolle	1,370
El Dorado	2,700
Lisbon	405
Miller County	50
Nevada County	605
Smackover light	2,570
Smackover heavy	22,090
Stephens	140
Urbana	375
Total	30,305
Last week	30,315
Decrease	10
Both states	61,140
Last week	61,045
Increase	95

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

North Louisiana

BOSSIER PARISH

Company, well, farm name, section and block—	Remarks:
John L. Anderson, tr.'s No. 1 Leonard, 600 ft. E, 300 ft. N, SW cor. Sec. 19-19-13	S.D. in Nacatoch; T.D. 1,042 ft. account high wtr.
Cryer Oil Co.'s No. 1 fee, 2,400 ft. N, 1,080 ft. E, SW cor. Sec. 25-19-12	Cmtd. 6-in. csg. 852 ft; drilled plug; W.O.
A. W. Phillips, tr.'s No. 1 Oden, 300 ft. W, 150 ft. N, SE cor. NW NW Sec. 4-18-13	Set 6-in. with packer 1,607 ft.; bailed dry 1,714 ft; W.O.

CLAIBORNE PARISH

United Gas Public Service Co.'s No. 1 Meadows, approximately 100 ft. S, center E½ E½ Sec. 13-21-5	D.S. test 4,514 ft; dry; coring 4,946 ft.
United Gas Public Service Co.'s No. 1 Temple, 1,340 ft. W, 660 ft. N, SE cor. Sec. 21-23-7	Coring 3,983 ft.

DE SOTO PARISH

Bailey Gantz et al's No. 1 Jenkins, NW cor. SE SW Sec. 35-13-12	S.D. for csg.; gas show 870 ft.; T.D. 890 ft.
Carroll & Holden's (was Warren & Craig's) No. 1 J. A. Wagner, 150 ft. S and W from C. Sec. 5-12-14	S.D. 2,880 ft.
Mrs. A. L. Ibach, tr.'s No. 1 Rambin, 350 ft. S and E. NW cor. NE NE Sec. 32-11-11	W.O. 3,527 ft.

(Continued on Page 66)

Porter Township, Midland County, Mich., Busy; Central West and Kentucky Fields Quiet

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

MOUNT PLEASANT, Mich., Apr. 17. Two completions were reported from the Central Michigan Field, one a dry hole and the other an oil well. Pure Oil Co.'s No. 2, 2,310 feet from the north line and 990 feet from the east line of the T. E. McCann farm, SW SE NE Section 7, Greendale Township, Midland County, produced 300 bbls. initial from the Dundee formation. This well in a way is important and is located east of the old Chippewa-Greendale Field and west of the border of the East Extension Pool. The McCann lease offsets the Novak lease to the north and is one of the best wells in that area. The other completion is Oil Prospecting Corp.'s test, 920 feet from the north and east lines of the Carrie B. McNitt estate, SW NE SE Section 10, Haring Township, Wexford County, which was shut down at a depth of 3,800 feet with no showing, but there is a rumor that it may be drilled deeper. This is near the town of Cadillac.

Pure Oil Co. abandoned its No. 3-A on the Roland Harnick farm, NW NE NE Section 14, Greendale Township, Midland County, which was completed in January and had an initial of 30 bbls. Same company, after drilling to 122 feet, abandoned No. 1 on the Anna Corning estate, N half NE NE Section 34, same township.

Porter Township Work

In the face of restricted banking operations, one of the biggest oil developments in Central Michigan has got under way in Porter Township, Midland County, where a 3,000-bbl. wildcat was struck in February. Ten tests were started the following week. Since then seven more have "spudded in" and locations are being cleared for several others.

At present the approximate cost of drilling a well into the Dundee formation in Central Michigan is from $12,000 to $18,000. Thousands of dollars are being expended by oil companies to build roads and clear land. The Porter Township area had but a few good roads and most of it is covered with second growth timber. More than 640 acres are under development at present. A 7-mile 6-inch pipe line has been constructed.

Until some of the tests are completed probably there will not be a great deal more new starts. Red Rock formations on some of the new tests have indicated many irregularities in the formation which may mean both large and small producers. Pure Oil Co.'s tests, 2,310 feet from the south and east lines of the State-Porter farm, NW NW SE Section 15, Porter Township, was reported running about 7 feet low.

Smith Petroleum Co. is drilling a test, 330 feet from the south and west lines of the Bushree farm, SW SW NE Section 22, Porter Township, a northeast offset to the Otway producing lease, after being forced to abandon the first start at 122 feet and skid to a new location. Sun Oil Co. is drilling No. 1 in the southeast corner of the J. L. Miller estate, SE SE NW Section 16, same township. Strange Oil & Gas Co. is drilling No. 1, in the southeast corner of the Sam Walley farm, S half SE Section 16, same township.

The Porter Township area represents the biggest concentrated play in Central Michigan in many months. Despite any indications that the district may prove spotty, oil companies seem to have confidence that the district will produce many profitable wells.

Permit Issued

Drilling permit was issued to Gordon Oil Co. for a test 990 feet from the north and west lines of the Muscott and others farm, SE NW NE Section 17, Porter Township, Midland County.

Talbot Oil Co.'s No. 4, southeast corner of the State of Michigan land, SE SE SE Section 10, Greendale Township, Midland County, is being treated with acid and makes an oil showing.

Two wells are nearing completion in the vicinity of the big well on the Otway farm: Pure Oil Co.'s No. 1, 1,650 feet from the south line and 2,310 feet from the east line of the P. O. Mates farm, SW NW SE Section 22, Porter Township, Midland County, and a direct east offset of No. 2 Otway farm, which is drilling 3,200 feet in the Traverse formation, and Gordon & Teaters' No. 1, 330 feet from the south line and 990 feet from the west line of the Phineas E. Baxter farm, SE SW NE Section 22, same township, a diagonal northwest offset to the Otway lease, is also drilling in the Traverse formation below 3,000 feet. Both should reach the Dundee within a short time.

Felton, Flaride and others are drilling in the Dundee at No. 2, 330 feet from the north line and 990 feet from the west line of the James P. Moffett farm, in Section 14, Greendale Township, Midland County. Pure Oil Co.'s No. 2-A, 2,300 feet from the south line and 990 feet from the east line of the Joe Novak farm, NW NE SE Section 7, same township, is another nearing completion.

Mellon-Pollock Oil Co.'s test, 990 feet from the north line and 330 feet from the east line of the Mrs. David Crowley farm, S half NE NE Section 23, Vernon Township, Isabella County, is close to the Dundee and will be completed soon.

Clare and Tuscola Counties

Ira Scheefley, trustee, is reported drilling around 3,300 feet at a test 200 feet from the south line and 940 feet from the west line of the All-American Fur Farm Syndicate's farm, SE SW SE Section 21, Summerfield Township, Clare County.

Pure Oil Co. is drilling around 2,500 feet at a test, 990 feet from the south line and 330 feet from the west line of

(Continued on Next Page)

Ritchie County, West Virginia, Holds Interest; Fair Producer Completed in Southeast Ohio

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Apr. 17.—Several new locations were made in the lower eastern fields during the week. Of prime interest are three in Clay district, Ritchie County, West Virginia, where the test of the Lucky Strike Oil Co. on the Edgar Hinton farm is still flowing. During the week it produced between 150 to 200 bbls. a day from the Injun sand. In this district, Frank Finley and others are moving in material on the Bohem and Neeley farm; Lucas and Mahaney have made a location on the Catherine Ball farm; the Hinton Farm Oil Co. has made a location on the L. E. Robinson farm, adjoining the Hinton farm.

Completions were again few in number. Six wells were reported, three gassers, one fair producer and two dry holes. The producer was a test in Southeast Ohio, which remains unusually inactive of late.

SOUTHEAST OHIO

But one completion was recorded in Southeast Ohio. In Coshocton County the Weiser Oil Co. completed a test on the Abraham Crowthers farm, Section 18, Perry Township. It was drilled in the Clinton sand at a depth of 3,149 feet and produced 26 bbls. the first day after shot. It is rated as a 10-bbl. pumper.

In Section 10, Independence Township, Washington County, the deep test of Benedum & Trees on the E. E. Knowlton farm was again active. During the week the tools made 38 feet to a total depth of 7,692 feet without striking the Clinton sand. Drilling is slowly being continued.

In Coshocton County Preston Oil Co. is down 2,700 feet on the Ward A. Little farm in Section 17, Perry Township. Mehown Oil & Gas Co. has not started drilling to date in its location on the Sol Haun farm, Clarke Township.

In Licking County, McClay Brothers are down 1,300 feet on the George Boyd farm, Section 3, Perry Township. Edward H. Everett Co. has a rig for No. 5 on the Felix Claypool farm, lease No. 2, Section 7, Hanover Township.

In Monroe County Southerland Oil & Gas Co. is drilling on the W. A. Quigley farm, Section 9, Franklin Township, and E. G. Cunningham and others are drilling on the Joseph Reed farm, Section 18, same township.

In Noble County Scott Oil & Gas Co. is down 450 feet on the Jacob Ulman, Jr., lease, Section 21, Elk Township. In Jefferson County C. S. Kelley and others are drilling on the Telfer Heirs farm, Saline Township. In Morgan County R. C. Whitener is drilling No. 12 on the Cornelia J. Starrett farm, Section 34, Deerfield Township. In Meigs County James Simpson remains shut down in a second test on the Rena Karr farm, Sutton Township.

In Columbiana County Alcoma Oil & Gas Co. is down 500 feet on the Levi Simmond farm in West Township. In Hanover Township, George E. Jewell and others have reached 3,983 feet on the Louden Libert farm.

In Vinton County Co-operative Oil Co. is drilling No. 3 on its own property in Section 3, Knox Township.

In Washington County, Robinson Brothers are down 1,300 feet on the Willard Templeton farm in Fearing Township. In Section 34, Newport Township, Swingle Brothers are down 600 feet in No. 4 on the Junius Greenwood farm. Herman Hill and others have a rig for a second test on the S. J. Weddle farm, Section 28, Grandview Township, and in Section 33, W. H. Knowlton and others are drilling on the James Harris farm.

WEST VIRGINIA

There were no producers completed in West Virginia during the week. On Walnut Creek in Elk district, Kanawha County, Virginian Gasoline & Oil Co. shot its No. 18 on the J. F. Brown farm in the Squaw sand and increased the production from 3 to 21 bbls. a day. In Calhoun County, Poling and Mollahan remain shut down in their test on the A. Simons farm in Sherman district at 2,104 feet, testing the oil from the Maxon sand. Fluid level in the casing has continued to increase.

In Boone County, Pond Fork Oil & Gas Co. completed No. 13 on the Cole and Crane lease in Washington district in the Berea sand and has a gas well.

In Calhoun County two gas wells were completed. In Sheridan district, W. T. and O. L. Yoke completed a test on the A. T. Yoke farm in the Injun sand at 2,035 feet. It will make a small well. In Washington district Norris and Cain completed their test on the John T. Miller farm in the Injun sand at 1,760 feet. It is a very light gasser.

In Roane County Reedy Oil & Gas Co. drilled a second test on the E. S. Guthrie farm in Curtis district. It found the Salt sand dry to 1,725 feet and was abandoned. In Wetzel County the Browns Run Gas Co. drilled a test on the James Marshall farm to 2,015 feet. It also proved to be a dry hole. The farm is in Clay district.

Drilling in West Virginia

In Boone County Cambridge Gas Co. is drilling No. 5 on the C. C. Lewis heirs farm in Scott district. In the same district C. P. Jones and others are down 940 feet on the R. W. McKinney farm. In Washington district, Pond Fork Oil & Gas Co. is drilling No. 14 on the Cole and Crane lease. In Sherman district Pure Oil Co. is rigging up for No. 1 on the LaFollette, Robson and Pritchard lease C, and is grading a road for its No. 61 on the Federal Coal Co. tract. In Crook district its test on the Poccello C. & C. Co. lease is down 981 feet.

No new drilling is reported from Calhoun County and two wells are still drilling. In Lee district F. F. McIntosh is down 1,730 feet on the Davis Brothers farm on Mushroom Run of West Fork Creek. W. A. Bickerstaff has reached 1,050 feet on the Edward Gainer farm, Center district.

In Roane County, D. S. Fisher and others have started drilling their test on the Stella V. Knotts farm, Spencer district. In Lincoln County, Kanawha Gas & Utilities Co. is getting ready to drill a second test on the Nona Johnson farm in Sheridan district. In Wayne County West Virginia Gas Co. has the materials

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Study these Records of Time Saving Performance

These remarkable records were made on two public demonstrations on March 16th and March 24th on the Tex-Exp. No. 18 Dooley well at Pierce Junction, Texas, owned by Navarro Oil Company of Houston. In both tests the company's crew of four men, including operator, were employed. The well contained 3745 feet of ⅝-inch rods and 2½-inch upset tubing. Entire string full of salt water. Rods "tailed out" and laid down in fourbles; tubing stood in fourbles. Rods handled on single line; tubing started with three lines strung up (after six fourbles were pulled the third line was tied down and the balance of tubing pulled, and the entire string run, on two lines).

	Time with HS-5500	*Time with HB 35*
Pulling Rods		
Time includes unhooking from beam, setting back beam, removing polish rod and stuffing box	35 min.	24½ min.
Pulling Tubing		
No time deducted for removing nipple, tying out third line, etc.	1 hr. 31 min.	1 hr. 50 min.
Running Tubing		
Tubing catcher used. Total time,	1 hr. 23½ min.	1 hr. 24 min.
Running Rods		
Time includes setting stuffing box and hooking up pitman and beam, ready to pump	32 min.	33 min.
TOTAL TIME	4 hrs. 1½ min.	4 hr. 11½ min.

The fact that approximately the same time was required to do the complete job on both occasions definitely establishes the ability of these units and warrants you in expecting such results on your own wells.

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on the ground for a test on the C. M. Watts farm.

In Cabell County C. C. Wolfe and others are rigging up on the T. H. Tanner farm, Guyandotte district. In his No. 5 on the Ben Lomond Land Co. lease, casing is being run at 1,438 feet. R. H. Adkins and others' test on the E. H. Darnell and others test is down 1,510 feet. In McComas district, D. R. Campbell and others are below the 2,500-foot level in a second visit on the Gilbert Holton farm.

In Ritchie County King Knob Oil & Gas Co. has started to drill on the Peyton Tingler farm on Lambs Run in Murphy district. In Gilmer County A. E. Ellis and others have resumed drilling on the L. H. Lydick farm in DeKalb district and have reached 1,725 feet.

SOUTHWEST PENNSYLVANIA

No completions were recorded in Southwest Pennsylvania during the week. The little drilling is almost confined to Amwell Township, Washington County, in the new pool. There Wise Oil & Gas Co. has set 6⅝-inch casing to the bottom, the 50-foot sand, 2,675 feet, in its test on the M. Roach farm. The Fifth, or producing, sand will be found at about 3,100 feet in this test. Drilling has been resumed. On the John Roach farm Raymond Orrill and others have started drilling another test. Carnegie Natural Gas Co.'s test on the C. L. Morton farm, about a mile northeast of the Hazlett farm, is holding up at about 12 bbls. a day. Work preparatory to locations is being done in this direction by several larger interests.

Wildcats

There was no change in the status of the wildcats drilling in Virginia and lower West Virginia. In Virginia work has been held up for a new cable, and in West Virginia completing a fishing job.

Central West Fields

(Continued from Preceding Page)

the George Veitengruber farm, E half SE Section 27, Vassar Township, Tuscola County. This well failed to get oil or gas in the Berea sand.

Muskegon County

In Muskegon County the Muskegon Oil Corp. failed to find a pay sand at 50 feet in the Dundee formation, in the northwest corner of the Orman Trumbull farm, NW SW NW Section 11, Dalton Township. Old Dutch Oil & Gas Co. is drilling in the northeast corner of the W. C. Cotes farm, SE SE NW Section 29, Blue Lake Township, same county. Reed Oil Co. is starting No. 2, in the northeast corner of the Paulson-Barlow farm, W half SE SE Section 8, Muskegon Township, same county.

CENTRAL WEST

Little has been accomplished in bringing in commercial producers of oil or gas in any of the divisions of the Central West Field, comprising the Lima, Indiana, Illinois, Central Ohio and Kentucky Fields. Kentucky, while very quiet at this time, looks like the best for operators of small means, on account of the shallowness of the producing sands, but the low price of crude and the depression has brought down the number of completed wells. The Central Ohio divsion maintains almost normal development, due to the hunt for natural gas, and when an oil well of commercial value is found it brings about more activity, especially if a wildcat.

Indiana Field is almost at a standstill, but there still remains large areas untouched. Back in the early nineties the Montpelier and other fields in the eastern portion of the Hoosier State were alive, rushing wells to the Trenton limestone formations, but there still remains as much undeveloped territory as there is producing territory. The west central portion of Indiana must not be overlooked as near Medarysville there is a shallow natural lubricant area that is very good crude with only a little treating, and the territory is shallow. Many years ago the writer visited a well in that field showing a production of close around 200 bbls. The big lease was the Vanetta farm, where an English company drilled many well, and this old producing area is now reported attracting the attention of oil men.

LIMA FIELD

In the old Lima Field but one well was reported completed, McPheron and others' No. 1 on the Oscar Smith farm, known as the Eagle Nest farm, in Section 35, Crane Township, Wyandot County, which produced an initial of 50 bbls. along with 400,000 feet of gas from the Trenton lime formation from 1,847-81 feet. Four other wells are either shut down or drilling in the same county. In Crawford Township, O. Neal and others are reported with a fishing job at a depth of 950 feet on the Arthur J. Ruehl farm, Section 1, Crawford Township, and Harpster and others are shut down at 1,385 feet in No. 1 on the L. G. Beis farm, Section 11, same township. In Ridge Township, same county, R. W. Kirk and others are drilling No. 2 on the Elmer E. Moser farm, Section 12, Ridge Township, and Newcomer and others are shut down on the Albert Reber farm, Section 1, Pitt Township, also in Wyandot County.

In the Tiffin Field in Seneca County, D. Lyons and others are below 1,500 feet in No. 2 on the James D. Watson farm, Section 1, Hopwell Township, and Sandusky Gas Co. is reported at 1,485 feet on the Anna Shoull farm, Section 10, same township.

Ackerman and others are still shut down at 1,200 feet on the Burley Waggoner farm, Section 31, Sandusky Township, Sandusky County. Montgomery and others have a rig in for No. 2 on the M. F. Hetrick farm, Section 31, Rice Township, same county.

E. J. Davis and others are shut down at 1,925 feet on the Charles Holloway farm, Section 7, Monclova Township, Lucas County.

In Mercer County, Henry Langencamp is drilling No. 4 on his own farm, Section 19, Granville Township, and Grace & Langford are drilling on the William Emans farm, Section 4, Union Township, same county.

In Auglaize County, Moulton Township, Adrian Tester Oil Co. is drilling No. 4 on the Harry J. Hanold farm, Section 34. C. Wintzer is drilling on his own farm, Section 28, Douchoquet Township, and N. E. Masters and others are drilling No. 2 on the George Rable farm, Section 11, Noble Township, same county.

CENTRAL OHIO

Only three completions were reported in the Central Ohio Field. In Stark County Ohio Fuel Gas Co. drilled in a gas well in the Clinton lime at a total depth of 4,344 feet in No. 2-5,709 on the J. F. Geib farm, Section 22, Jackson Township. In Fairfield County, City Natural Gas Works of Lancaster drilled in a light gas well in No. 3 on the F. G. Ruff farm, Section 27, Pleasants Township, in the Clinton lime at 2,353 feet. In Licking County G. E. Earley Co.'s No. 2 on the J. L. Hall farm, Section 3, Newton Township, is a light gas well in the Berea sand from 722-30 feet.

McMillan and others are drilling on the Belle Smith farm, Section 24, Ridgeville Township, Lorain County. Barnhart and others are still fishing on the Hillside Country Club grounds, Section 4, Richfield Township, Medina County. In Richland County, Spohn & Nachman's test on the Nina Freer farm, Section 7, Weller Township, got a light gas showing in the first Berea sand from 335-44 feet. No showing was found in the Second Berea sand from 369-416 feet, and it is undecided whether to go deeper.

In Jackson Township, Stark County, the most active developing county in Central Ohio, Barnhart and others are reported drilling at 3,800 feet on the J. Montgomery farm, Section 25, Cable and others are shut down at 2,950 feet on the O. Clovis farm, Section 25, same township. Pfeiffer and others are drilling around 4,000 feet on the W. and F. Immel farm, Section 12. Brendal Producing Co. is drilling around 3,900 feet in No. 10 on the Lake Cable Co. farm, Section 6. Kime and others are drilling around 2,500 feet in No. 4 on the Charles A. Oberlin farm, Section 6, Jackson Township. In Plain Township, same county, Cunningham Natural Gas Co. is drilling on the Joe Herman farm, Section 17, same township. White and others are moving in a rig on the Sarah Lorenz farm, Section 17. East Ohio Gas Co. has a rig in for No. 1 on the H. G. McDowell heirs farm, Section 15. Brendal Producing Co. has a rig on the J. S. Unger farm, Section 17, same township, also a rig for No. 1 on the Isaac and Elmer Markley farm, Section 9, same township. East Ohio Gas Co. is drilling below 4,200 feet in No. 1 on the Stella Strausser farm, Section 18, same township, and has a rig up for No. 1 on the Otto Frank and others farm, Section 20, Plain Township. Kemrow Co. is drilling below 2,600 feet on the Orchard Acres,

(Continued on Page 78)

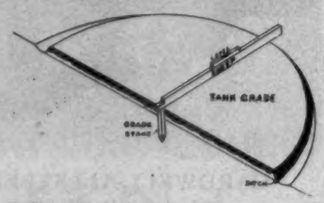
Hints of Practical Value

By L. G. E. BIGNELL

Petroleum Engineering Editor

Grades for Small Tanks

The lease man, pipe line pump station attendant and others in the oil business frequently have old wood or steel tanks to reset. Wooden tanks really require the services of experienced tank setters to reset them, but what is said about



grades applies equally well to all kinds of tanks.

It is seldom the case that the surface of the ground selected for the side of a battery of tanks will be level in all directions. As it is quite essential that the pipe line connections of every tank are at a uniform level it is also necessary that the grade be level. This is done by cut or fill or both.

First determine the average level of the grade upon which the tanks are to be set and establish a working point to conform to it. Then by removing the soil at the high point and filling it in at the low point the general grade is roughed out.

As bolted steel tanks are in very common use for the oil and water in the oil fields and along pipe lines the type of grade best suited for them will be next considered.

It is quite essential that a bolted tank be set upon a good firm level foundation. It is preferable that this grade be either all cut or all fill if possible. Where it is part cut and part fill the filled portion may later compact and the tank be thrown out of level. Roughly soil in place will occupy about half the volume of loose, freshly broken material.

To level the earth immediately under the tank it is good practice to first drive a stake in the center of the grade, sinking it so that the top will be at the position decided upon at the final level for the tank bottom.

Select a 16 or 20-foot length of 2"x4" or 2"x6" timber that is fairly straight to use as a sweep. With an axe cut away about half of one end of this timber so that a large spike can be driven through it and into the top of the stake to form a pivot around which the sweep can be moved in a circular motion.

A spirit level is placed on the upper edge of the sweep and the sweep is then dragged around the surface of the grade until all parts of it have been brought to a level. If the grade is made of loose earth the level should be a little above that of the grade in the solid soil to allow for future sinking and compacting but this allowance need not be much if the loose earth is well tamped as placed in position.

Racking Pipe

Racking tubular goods may seem at first glance to be a very simple operation and something that can be left to the yard man or lease roustabout. A check among men experienced in this work indicates that this is not the case and there are many details to be considered in the handling of pipe that warrant carefully made plans.

To pile the pipe upon the bare ground is, of course, poor practice and this is not done except in rare instances when time is limited and it is planned to move the pipe again soon. But it is common practice to use timbers for sills in stacking pipe and this is to be avoided as much as possible. Timbers will rot in time and will be brushed by the weight of the pipe. This movement may cause the pipe to roll, and the pile to become unsafe.

For permanent use it is now common practice to cast concrete sills in the ground upon which the pipe is piled. These sills are parallel and extend out of the ground far enough to permit the circulation of air under the pipe and this helps to keep the ground dry and prevent moisture from accumulating on the lower tier of pipe and prevents corrosion.

To facilitate rolling the pipe over the concrete sill it is usual practice to cap the sill with oak planks. They are laid loose and kept in place by the weight above them. Using hard wood for this purpose has been found quite satisfactory and is recommended rather than half burying rods of iron or steel in the sills to serve this purpose.

If round bars of iron or steel such as sucker rods are used to cap the concrete sills there may be damage to the pipe or casing if the pile moves at any time and a piece of pipe falls upon this hard projection. This is particularly true when lightweight casing is being handled and in many instances it has been found that it has been dented when dropped upon the round bar. It is therefore better practice to cap the concrete sills with oak plank and separate the different layers of pipe with pieces of thin wood with cleats nailed to each end to permit straight piling of the pipe.

To keep inventory on pipe in the racks it is good practice to check the amount of pipe in each layer as stacked and paint the total lengths upon the side of the end piece of pipe in each tier. In this way it is possible to quickly check material on hand because only the pipe in the upper broken tier needs to be measured and added to the total for the other layers. This keeps a perpetual inventory and makes it a simple operation to report pipe on hand at any time.

Crude Oil Improvement Predicted in California; Gov. Rolph Sends Message to Legislature

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., Apr. 15.—After a decidedly unfavorable first quarter, both from a sales and financial standpoint, Pacific Coast marketers anticipate a substantial improvement during the next six months. Gasoline sales have shown a consistent up trend since the first of the year, and, while still below distribution during the comparable period last year, are nevertheless reassuring. The price structure of both crude and refined oil has been readjusted and with this basic improvement effected the ground work has been laid for a general betterment later in the year, provided of course, crude oil producers maintain effective curtailment. The absence of any regulatory legislation leaves the situation in California in a rather uncertain state and this unstable condition has invariably been reflected in a generally disturbed condition in the refined oil market.

Producers and refiners have been unable to arrive at any unanimity with respect to the enactment of any constructive legislation which might prove beneficial to the industry at large. Governor Rolph early this week transmitted a report to the state legislature outlining the outcome of the Washington conference for consideration. In commenting on the Sharkey Bill, passed by the legislature two years ago and subsequently defeated at a referendum, Governor Rolph informed the legislature that, "this may have been due to the fact that our proposed statute gave in substantial part the enforcement of oil restriction to representatives of the industry itself. The President directs particular attention to the recommendations of the combined committees and you may therefore wish to consider the advisability of giving to some such constitutional body as our Railroad Commission the power to limit and prorate production. The present recognition by the executives of all the oil-producing states, by the industry at large, and by the President and his Secretary of the Interior, of the need for immediate action will, I think, commend itself to you and justify in no small measure the course proposed in this state two years ago." As might be expected, John B. Elliott has voiced his opposition to the proposed enactment of any regulatory legislation at Sacramento.

Vertical Drilling Bill

In addition to the proposal to consider the advisability of enacting a compulsory curtailment measure, the California legislature may consider another bill which specifically relates to the drilling of oil wells in the state. Senate Bill No. 606, as amended, proposes to fix the maximum drift from the vertical in the drilling of oil wells in order to prevent the whipstocking of wells from the edge of the structure to intercept oil zones higher on the structure. Members of the Oil Producers Sales Agency of California have unanimously opposed passage of this bill and appointed a committee to lobby against its enactment. Members of the agency expressed doubt as to the accuracy of present surveying methods; contend the bill would practically require the redrilling of all crooked holes should subsequent deepening operations be planned and opposed the granting of arbitrary powers in the state oil and gas supervisor. The committee appointed by the sales agency to appear in protest against the bill consists of Ralph B. Lloyd, R. A. Broomfield, C. C. Spicer, Rush M. Blodget, A. Wardman, R. E. Havenstrite, Melville Dozier, Jr., R. A. Broomfield, Jr., Paul Grimm, William H. Whaley, Emil Kluth and Harry Maddren.

Kettleman Hills

Although it may be several weeks before the North Kettleman Oil & Gas Co.'s No. 1 Lillis-Welsh approaches or exceeds the world's drilling record for depth, California operators are keenly interested. The interest is not due entirely to the fact that it is the deepest hole to be drilled in California but operators are likewise interested in the possibility of developing Eocene production in the Kettleman North Dome Field. This hole, even though it proves a duster, does not necessarily preclude the development of deeper production in the North Dome, as No. 1 Lillis-Welsh is on the extreme western plunge of the structure and approximately 2 miles from the nearest producing well. This outpost will be of prime importance if commercial production is developed as it would substantially increase the limits of the field and increase the reserves of the state tremendously. Due to its great depth, No. 1 Lillis-Welsh does not look quite so hot for production, although it still has an outside chance. The hole is believed to have picked up the top of the Eocene at approximately 10,300 feet, although paleontologists are not positive. Unless plans are changed, it is the intention to carry it down to approximately the 11,000-foot level, if mechanically possible.

There are several wells nearing completion in the Kettleman North Dome Field and with 15 days left, it appears probable two potential producers will be tanking oil before the close of April. Kenda has two new wells within a few hundred feet of completion and Superior Oil Co. has another on the Huffman property. The latter company has been making exceptionally fast progress. Superior started work on No. 6 Huffman on January 22, and up to April 12 had made 8,406 feet of hole. Progress during the past week has been retarded by mechanical trouble. Standard Oil Co. spudded in No. 8-21-J simultaneously with the starting of drilling operations on No. 6 Huffman but made only approximately 7,800 feet of hole. Union Oil Co. spudded in No. 3 Amerada King early in December, 1932, and has just reached the 8,000-foot level. No. 3 King and No. 8-21-J of the Standard encountered an abnormal thickness of exceedingly hard formation which slowed up drilling.

Kenda's Operations

The Kettleman North Dome Association, referred to by California operators as Kenda, produced 9,322,008 bbls. of crude during 1932. In addition to the oil, the Association also produced 53,111,425 gallons of natural gasoline and 37,203,536,000 feet of wet gas. The total contribution by members of the Association, organized to unify drilling and production activities, to cover operating expenses and costs of development and construction in 1932 was $2,025,113. The Association completed seven new wells with a conservative rated daily potential of 40,000 bbls., which increased its potential to approximately 100,000 bbls. The rated potential of new wells in the North Dome is ultra conservative as completions are not allowed to flow wide open to establish maximum production. Operators in the North Dome are not particularly interested in establishing excessive potentials as producers have mutually agreed to conform with a pegged allowable irrespective of their potentials. The Kettleman North Dome Field has a conservative rated daily production of 275,000 bbls. and this is expected to be substantially increased within 30 days. During 1933 Kenda contemplates drilling a test in the eastern part of the structure about a mile north and west of General Petroleum's Oschner property but will limit development work to a minimum in 1933. The Association has already drilled ample wells to prevent undue drainage in the Huffman and Felix areas and will probably center its drilling activities in other sections.

Long Beach

Plymouth Oil Co. chalked up a nice well in the Long Beach Field of Los Angeles Basin early in the week when No. 10 Signal was recompleted flowing 1,062 bbls. of clean 26.6 gravity oil per day. This well, which previous to its rejuvenation, was pumping approximately 100 bbls. per day, was originally drilled to 6,961 feet but plugged back to 5,440 feet and 5¾-inch perforated at 5,100-50 feet. It is the best well finished in the Long Beach Field for several months. There is still a lot of reconditioning work being done in the Long Beach Field but developments indicate a little relaxation in drilling. The Long Beach Field experienced another of its periodic fires during the week when natural gas from the Lucky Strike well on Cherry Avenue near Willow Street was ignited during a fishing job. The fire spread to tanks on adjoining property and damaged the derrick and equipment on No. 2 Signal of George F. Getty, Inc. The tanks were badly damaged by the resulting explosion and will have to be replaced.

Coyote

Standard Oil Co. added another well to its list of producers in the West Coyote Field of Los Angeles Basin when No. 52 Emery was brought in flowing 1,455 bbls. of 30.1 gravity oil and 662,000 feet of gas per day. This well, which was drilled to 6,000 feet but plugged back to 5,950 feet, was finished with an 8⅝-inch water string landed and cemented at 5,192 feet and a 6⅝-inch liner, including 797 feet of perforated. The output is still cutting a little in excess of pipe line requirements but appears to be cleaning up and may show clean oil. The crew was transferred to No. 113 Murphy Coyote and an early spud is contemplated. The company is drilling one other well in this field but is doing only a minimum amount of work. Standard has 121 upper zone producers shut down in this field and is producing its allowable quota by flowing deep zone producers.

Dominguez

A new operator entered the Dominguez Field early in the week when W. T. Ball staked location for a well to be drilled 300 feet north of the north line of Union's Callender lease. In addition Shell started rig construction for No. 44 Reyes, to be spudded before the close of the month. Union is working on three holes in the Dominguez Field but since the company is strictly adhering to the curtailment program this work is more or less of a routine nature. Republic Petroleum is still working on No. 3 Childs in an effort to exclude edgewater in the upper zone. Otis Hoyt has completed his No. 15 in the Richfield district with commercial production. This well, bottomed at 3,767 feet and finished with a 6¼-inch liner carrying 71 feet of perforated, is flowing 197 bbls. of exceptionally clean 28.9 gravity oil and 115,000 feet of gas per day through a twenty-eight-sixty-fourth-inch bean. Interest in the Seventeenth Street town lot area of the Huntington Beach Field was stimulated by the starting of two new wells and completion of preparations to begin redrilling operations in several others. Bestmi Petroleum Co. has taken over No. 5 of George F. Getty, Inc., and is rigging up rotary equipment preparatory to a resumption at 4,280 feet. Other redrilling jobs in the Huntington Beach Field include Blackwell & Sunde's No. 7, Standard Oil Co.'s No. 1 Anderson and Wilshire Oil Co.'s Nos. 1 and 6-A. The latter two wells are temporarily suspended. New work includes No. 1 Smith of Macroo Oil Co., No. 1 of Sierra Huntington Oil Co., No. 2 Severns of Southern California Drilling Co. and P. A. Kingsland's No. 4. In the Inglewood district of Los Angeles Basin, A. M. Kupfer has reached 5,530 feet in No. 1 Sentous, but has not yet succeeded in logging an oil sand which might justify a production test. Universal Consolidated is drilling in a shale and oil sand in No. 1 Crus, a projected deep test in the extreme eastern end of the Montebello Field, but this upper zone will be cased off as this hole is scheduled to be carried into the Miocene for a deep test. On the Germain property, Community Oil Co. is redrilling No. 1, bottomed at 5,004 feet. A check of work under way in the Playa Del Rey Field indicates that two wells

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.	T.	R.	Depth	Status—
Palm Ridge Oil Co., No. 1 Palm, Los Angeles Co.	2-	2-	15	4,312	suspended
Pan Tex Oil Co., No. 1 Lawndale, Los Angeles Co.	20-	3-	14	5,915	reconditioning
Baldwin Oil Co., No. 9 Inglewood, Los Angeles Co.	7-	2-	14	5,863	suspended
Kupfer, A. M., No. 1 Inglewood, Los Angeles Co.	17-	2-	14	5,550	br. sh. drilling
Pacific Gulf, No. 1 Athens, Los Angeles Co.	19-	2-	13	6,094	suspended
Pacific Oil Inv. Co., No. 1 Wilmington, Los Angeles Co.	28-	4-	13	3,717	suspended
Wilmington Oil Co., No. 1 Wilmington, Los Angeles Co.	28-	4-	13	3,390	cemented
Jones, W. L., No. 1 Lynwood, Los Angeles Co.	31-	2-	12	4,870	sd. sh. drilling
Community Oil Co., No. 1 Montebello, Los Angeles Co.	34-	1-	11	5,064	redrilling
Universal Consd., No. 1 Montebello, Los Angeles Co.	5-	2-	11	4,000	O. S. drilling
Willetts Pet., No. 1 Saugus, Los Angeles Co.	26-	5-	16	1,904	cleaning out
Smith, J. A., No. 1 Saugus, Los Angeles Co.	32-	5-	17	2,515	suspended
Alpha Oil Co., No. 1 Calabasas, Los Angeles Co.	22-	1-	18	764	sd. sh. drilling
Hudson Pet., No. 1 Newhall, Los Angeles Co.	1-	3-	16	1,371	sd. sh. drilling
Ball, W. T., No. 1 Newhall, Los Angeles Co.	34-	3-	16	3,582	suspended
Big Four Oil Co., No. 1 Newhall, Los Angeles Co.	32-	4-	16	2,230	suspended
Marble, Willard, No. 1 Van Nuys, Los Angeles Co.	6-	2-	16	2,000	cleaning out
Nuoil Co., No. 1 Newport, Orange Co.	29-	6-	10	3,901	suspended
Mineral Exploration, No. 1 Capistrano, Orange Co.	8-	8-	7	4,303	suspended
Placentia Dev. Co., No. 1 Placentia, Orange Co.	31-	3-	9	rig	rigged up
Spindletop Oil Co., No. 1 Salton Sea, Riverside Co.	25-	7-	10	3,590	suspended
Keeley, E. J., No. 1 Corona, Riverside Co.	21-	4-	6	697	sd. sh. drilling
Duncan, N. L., No. 1 Sagebrush, Riverside Co.	8-	4-	6	1,157	suspended
Great American Pet., No. 1 Chino, San Bernardino Co.	18-	2-	8	1,733	hd. sd. drilling
Mason Oil Co., No. 1 Salton Sea, Imperial Co.	1-	17-	15	680	suspended
Woods, D. H., No. 1 Salton Sea, Imperial Co.	7-	11-	16	774	suspended

will be given production tests within 10 days.

San Miguelito

Another new well is expected to be completed in the San Miguelito Field of Ventura County before the end of May, No. 1 Valenzuela of Honolulu Consolidated, which is in a hard gray sand at 5,450 feet. A string of 8⅝-inch casing is expected to be landed and cemented at approximately 6,590 feet, following which the well will be finished at about 7,175 feet. About midway between No. 1 Valenzuela of the Honlulu and Continental's No. 1 Grubb, the first substantial producer in this field, the latter is rotating in No. 2 Grubb at 2,971 feet. In the western part of the field, Chanslor-Canfield Midway Oil Co. is rotating in No. 3-A Hobson at 1,397 feet. In the Rincon Field, at the extreme western end of the Ventura Avenue anticline, Indian Petroleum Corp. is drilling at 3,170 feet in No. 1 on tideland permit No. 82. This project has cored several lenses of oil sand in the past 150 feet of hole, but drilling operations are expected to be continued until a solid oil sand is definitely cored.

In the Santa Barbara Mesa Field, R. H. McIntosh completed No. 1 Ora pumping 212 bbls. of exceptionally clean 18.1 gravity oil per day from 2,116 feet, the hole having been finished with a 4½-inch liner carrying 50 feet of perforated pipe. J. J. Doyle, who is drilling a second deep test on the Bolsa Chica Oil Corp.'s tideland permit No. 191 in the Coal Oil Point district of Santa Barbara County, contemplates drilling two additional tests in this area before concluding exploration work. Doyle Petroleum, of which Mr. Doyle is president, recently acquired operating rights with Bolsa Chica Oil Co. on tideland permits Nos. 159, 160, 161 and 191 after a thorough geological examination. Bolsa Chica logged some rather favorable indications in the Vaqueros in its No. 1 on tideland permit No. 191 about two years ago but was unsuccessful in conducting a thorough test of the Vaqueros due to mechanical trouble. The first hole was subsequently carried down into the Sespe by Superior Oil Co. but was quitclaimed back to Bolsa Chica interests. The Coal Oil Point structure shows promise from a geological standpoint and justifies the drilling of at least one more test. The hole which Doyle Petroleum is now drilling is 400 feet north of the original deep test drilled by Bolsa Chica Oil Co. and while this exploration is warranted those interested in this area would like to see a conclusive test drilled east or west of the present pier. Associated Oil Co.'s No. 130 Lloyd, a recent completion in the Ventura Avenue Field, has not cleaned up to the extent expected and may result in a resumption of drilling operations. This new well, finished a week or 10 days ago, is cutting approximately 13 per cent, the water testing 1,450 grains of salt per gallon. General Petroleum is nearing the 7,100-foot level in No. 15-A Barnard, a deep test in Ventura Avenue Field, but since it is listed for completion in the deep zone at approximately 9,700 feet, it will probably be 60 days before operations are concluded.

Lost Hills-Belridge

Continental Oil Co. has just spudded in No. 4 Result, in the North Belridge Field of Kern County, and completion is expected in the Temblor formation early in the summer. Casa Mera Oil Co. is in a hard brown shale at 1,810 feet in a new well between North and South Belridge, but it will be another 30 or 60 days before the hole is deep enough to prove of special interest. The Belridge Oil Co. has restricted its operations in the North Belridge Field of Kern County to one hole, No. 63-27, which will be listed for completion in the Temblor within 60 days. The company suspended work after grading location for No. 16-35, a new well, and will not do any further work on No. 49-35, which has just been cleaned out following a fishing job. Associated is stepping along with No. 1 Williamson, a joint test with Richfield Oil Co. in the Lost Hills Field of Kern County, but has not yet logged the top of the Temblor at 3,350 feet.

Union Oil Co. has completed No. 1 Keene in the Midway section of the Midway-Sunset Field of Kern County, pumping 150 bbls. of 18.9 gravity oil per day from 1,505 feet. This well was drilled to conform with lease requirements. Standard is still working on No. 1 Mascot, a deep test which the company drilled in the Midway-Sunset Field to 9,762 feet, but does not appear to be having much success in attempting to develop production on the way out before abandonment. Honolulu Consolidated is expected to complete No. 44 in Section 8-32-24 during the next 15 days, as it is drilling in oil sand at 2,825 feet following a successful water shut off at 2,265 feet. Two new wells were spudded in at Fruitvale and two more, No. 1 Mason of Kernco Oil Co. and No. 1 Kizziar of Verdi Oil Co., are expected to be under way shortly. The latest spuds are at No. 1 Schmidt of Gerard Production Co. and No. 1 Etchechury of McClurken, Taylor and Stanford. H. W. Allen is in an oil sand in No. 1 Forney in the Fruitvale district at 4,091 feet and will probably make a production test in the near future.

Hub Oil Co. recently consummated an operating agreement with T. H. Purman whereby it will proceed with work on the latter's No. 1 in the Gould Hills district of Kern County. Purman, after logging several promising showings, suspended drilling operations about 90 days ago at 5,390 feet. In the Mount Poso Field, California Western Oil Co. is putting No. 1 in Section 23-27-27 on the beam at 1,156 feet after plugging back from 1,264 feet and finishing the job with an 8⅝-inch perforated liner. General Petroleum has not yet started to make any additional hole in No. 10 Heisen, which will be deepened to the second Vedder zone. Pacific Coast Division Oil Co. will test its first well in the Mount Poso Field within 10 days.

Southwest Texas Fields

(Continued from Page 50)

National Bank in Live Oak at 1,002 feet, and Whitfield abandoned his No. 1 Drummond at 1,664 feet.

In southern Karnes County around Green and lining up somewhat with the Pettus Field, Campbell abandoned his No. 1 Gillett at 2,418 feet and of two new tests Magnolia's No. 1 Porter is down 1,800 feet and The Texas Company's No. 1 Stewart down 2,860 feet. Another week or two will carry each of them to the Pettus sand.

Hidalgo County

Carl & Johnston's No. 1 Doughty in about the center of Hidalgo County, nearly due south of Magnolia's No. 2 Seeligson which opened a new pool in southern Jim Wells County, blew in last Friday at 1,660 feet making gas and water and ran wild for most of the day. It is nearly on a line between the new Magnolia Pool on the north in southern Jim Wells County and the tests across the Rio Grande in Old Mexico where some wells have been showing gas and oil and two blew out at shallow depth.

Atravasada Oil Co.'s No. 1 Hernandez on the north edge of the Sarnosa Pool in Duval County which has been worked on for a month to bring it in flowed 150 bbls. in 10 hours on gas-air lift.

South Texas Oil Co.'s No. 15 Laurel in Survey 271 in the Laurel Pool in Webb County at 2,214 feet is completed for 400 bbls. of oil daily.

Reynosa Oil Co.'s No. 5 Hahl at north end of North Government Wells Pool at 2,307 feet was completed for 20 bbls. hourly and Navarro Oil Co.'s No. 4 Hahl, also at north end of same field at 2,298 feet was completed for 20 bbls. hourly.

Sun Oil Co. made location for No. 1 Weiderkehr in southeast corner of Survey 359, a west offset to the producer of Navarro Oil Co. and is down a few hundred feet.

The Texas Company's No. 7 Johnson at north end of same field at 2,258 feet is a 10,000,000-foot gas well.

William B. Stewart has made location for No. 3 Duval County Ranch Co. in Survey No. 363, the next survey west of that in which he is testing two wells, and Lundell Brothers have made location for their No. 1 fee in Survey No. 364, the next west of No. 363.

Humble Oil & Refining Co. has started construction of a 6-inch line from the new Hilbig Pool in Bastrop County to its main line at Luling about 15 miles distant.

RUMANIA CURTAILS OUTPUT

NEW YORK, Apr. 17.—Rumanian oil producers again restricted production in line with their agreement with the world oil companies during February, total production for the month being 520,000 tons, as compared with 720,000 tons in December, the last month before the curtailment program became effective. The five leading producing companies during February were as follows: Astra Romana, Steaua Romana, Concordia, Phoenix Oil, and Romana-Americana, the last-named being the Rumanian subsidiary of the Standard Oil Co. (New Jersey).

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	April 1—		March 25—			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	.....	.....	.....	.....	78,085	.....
Fuel oil	.....	.....	72,470	10,353	379,473	.....
Diesel and gas oil	.....	.....	.....	.....	926,394	119,890
Gasoline	189,350	27,036	147,904	21,129	1,701,652	1,588,633
Kerosene	.....	.....	.....	.....	411,076	.....
Foreign exports—						
Crude oil	89,432	12,776	213,705	30,386	1,720,246	2,314,132
Fuel oil	277,183	39,598	161,350	23,050	1,873,132	2,648,835
Diesel and gas oil	30,465	4,352	9,949	1,421	823,528	577,384
Gasoline	38,428	5,490	12,350	1,836	1,239,303	2,551,377
Kerosene	.....	.....	.....	.....	485,674	718,838
Naphtha distillates	.....	.....	.....	.....	.....	41,175
Coastwise-domestic—						
Crude oil	326,036	46,577	309,313	42,902	3,425,313	4,099,213
Fuel oil	162,794	23,256	131,267	18,752	2,580,973	3,911,846
Diesel and gas oil	.....	.....	9,133	1,305	407,166	467,201
Gasoline	196,569	27,938	89,714	12,816	2,954,137	3,688,407
Kerosene	9,218	1,174	9,373	1,339	64,375	46,358
Naphtha distillates	.....	.....	.....	.....	27,651	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	280,531	70,995
Gasoline	.....	.....	.....	.....	239,016	146,441
Kerosene	.....	.....	.....	.....	211,855	.....
Lubricants	.....	.....	.....	.....	8,250	7,849
Foreign exports—						
Crude oil	75,125	11,161	.....	.....	398,411	418,965
Fuel oil	.....	.....	.....	.....	190,939	442,083
Diesel and gas oil	.....	.....	.....	.....	300,145	253,934
Gasoline	.....	.....	.....	.....	1,152,418	896,063
Kerosene	63,850	11,979	.....	.....	250,960	274,951
Lubricants	.....	.....	.....	.....	13,072	20,884
Coastwise-domestic—						
Fuel oil	.....	.....	71,208	10,173	785,253	694,659
Diesel and gas oil	.....	.....	.....	.....	142,550	176,747
Gasoline	83,147	11,878	78,059	11,151	973,733	811,902
Kerosene	6,579	940	.....	.....	50,069	19,110

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S. T. R.	Depth	Status—
Fairview Oil Co., No. 1-A Purisima, Santa Barbara Co.	18- 7-34	1,528	sd. sh. drilling
Listle, K. L., No. 1 Purisima, Santa Barbara Co.	33- 8-34	....	grade road
Duell, O. S., No. 1 Naples, Santa Barbara Co.	7- 4-29	5,132	suspended
Equity Oil Co., No. 1 Coal Oil Point, Santa Barbara Co.	24- 4-29	3,750	suspended
Bolsa Chica, No. 1 Coal Oil Point, Santa Barbara Co.	tideland	4,089	suspended
Bolsa Chica, No. 2 Coal Oil Point, Santa Barbara Co.	tideland	2,243	sd. sh. drilling
Cuyama Oil Co., No. 1 Cuyama, Santa Barbara Co.	12-10-27	2,987	suspended
Woodrow Pet., No. 1 Rincon, Ventura Co.	4- 3-24	6,971	hd. sh. drilling
Indian Pet., No. 1 Rincon, Ventura Co.	tideland	3,191	sd. sh. drilling
Commander Oil Co., No. 1 Filimore, Ventura Co.	13- 4-19	2,400	pump. test
Hancock Oil Co., No. 1 Filimore, Ventura Co.	13- 4-19	1,232	suspended
Honolulu Consolidated, No. 1 Miguelito, Ventura Co.	23- 3-24	5,512	hd. sd. drilling
Continental, No. 2 Miguelito, Ventura Co.	23- 3-24	3,908	sd. sh. drilling
C. C. M. O., No. 3-A Miguelito, Ventura Co.	23- 3-24	1,283	sd. sh. drilling
Midlands Pet., No. 1 Ojai, Ventura Co.	9- 3-23	5,991	hd. sh. drilling
Macrate, A. N., No. 1 Ojai, Ventura Co.	27- 4-23	2,071	suspended
Wilshire Oil Co., No. 1 Sulphur Mountain, Ventura Co.	20- 4-21	1,863	suspended
Mosher, J. W., No. 1 Santa Paula, Ventura Co.	22- 4-21	1,981	br. sh. drilling
Hardison & Temple, No. 1 Timber Canyon, Ventura Co.	22- 4-21	248	suspended
Duell, O. S., No. 1 Timber Canyon, Ventura Co.	31- 4-20	316	suspended
Petro Producing Co., No. 1 Timber Canyon, Ventura Co.	18- 4-20	3,350	will deepen
Los Posas Pet., No. 1 Los Posas, Ventura Co.	22- 3-20	3,801	sd. sh. drilling
Wilshire Oil Co., No. 1 Bardsdale, Ventura Co.	12- 3-20	1,732	suspended
International Oil Developers, No. 1 Conejo, Ventura Co.	33- 2-20	2,770	testing
Anderson, C. L., No. 1 Santa Susana, Ventura Co.	36- 3-18	1,930	cemented
Purman, T. H., No. 1 Gould Hills, Kern Co.	22-29-21	5,399	recemented
Purman, T. H., No. 2 Gould Hills, Kern Co.	27-29-21	335	suspended
General Pet., No. 1 McKittrick, Kern Co.	10-30-21	....	grade
Casa Mira Oil Co., No. 1 Belridge, Kern Co.	29-28-20	1,358	sd. sh. drilling
General Pet., No. 1 Belridge, Kern Co.	30-28-21	3,260	suspended
Milham Exploration Co., No. 24 Buttonwillow, Kern Co.	5-28-23	2,625	wet
Cumberland Oil Co., No. 2 Devil's Den, Kern Co.	17-26-18	3,270	suspended
Holloway, A. S., No. 1 Devil's Den, Kern Co.	11-25-18	1,848	suspended
Hanna, Tom, No. 1 Devil's Den, Kern Co.	25-25-18	3,516	suspended
Pyramid Hills Oil Co., No. 1 Devil's Den, Kern Co.	24-25-18	3,460	suspended
Fowler, F., No. 1 Blackwell Corner, Kern Co.	15-26-19	3,170	suspended
Rio Cal Pet., No. 1 Shale Hills, Kern Co.	2-27-18	2,355	resume work
Associated, No. 1 Lost Hills, Kern Co.	2-26-20	3,300	hd. sh. drilling
Seminole Oil Co., No. 1 Lost Hills, Kern Co.	29-25-21	rig	suspended
Caraval Pet. Co., No. 1 Edison, Kern Co.	19-30-30	316	suspended
Jergins, A. T., No. 1 Edison, Kern Co.	20-30-30	2,211	sd. sh. drilling
Mohawk Pet., No. 1 Weed Patch, Kern Co.	30-30-29	5,489	sd. sh. drilling
Hogan, Dana, No. 1 Weed Patch, Kern Co.	32-30-29	5,114	sd. sh. drilling
Descanso Oil Co., No. 1 Wheeler Ridge, Kern Co.	31-11-19	3,620	suspended
Western Minerals Co., No. 1 Madera, Madera Co.	21-10-17	rig	rigging up
Kingsburg Expl. Co., No. 1 Kingsburg, Fresno Co.	30-16-23	2,970	suspended
Bergman, Harry, No. 1 Kingsburg, Fresno Co.	12-12-11	3,518	hd. sd. drilling
Graham & Loftus, No. 1 Raisin City, Fresno Co.	20-15-18	4,114	hd. sh. drilling
Emerich Oil Co., No. 1 Mendota, Fresno Co.	35-13-13	791	sd. sh. drilling
Kent & McDonald, No. 1 Carrizo Plains, S. Luis Obispo Co.	3-32-22	3,815	cleaning out
Emerich Oil Co., No. 1 Carrizo Plains, S. Luis Obispo Co.	22-32-22	1,841	suspended
Paso Robles Oil Co., No. 1 Edna, San Luis Obispo Co.	27-27-11	4,191	suspended
Shell, No. 1 San Miguel, San Luis Obispo Co.	4-25-12	5,789	hd. sh. drilling
Pacific Inland, well No. 1, Monterey Co.	19-23-15	2,441	suspended
Guess, E. B., No. 1 Corcoran, Kings Co.	7-21-21	6,197	suspended
Brown, A. M., No. 1 Cloud, Kings Co.	10-23-19	307	cemented
Dudley Dome Oil Co., No. 1 Dudley Ridge, Kings Co.	9-23-20	3,012	suspended
Tulsco Oil Co., No. 1 Ridge, Kings Co.	30-22-20	mtl.	building rig
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-23-17	6,873	suspended
Kettleman Ridge Oil Co., No. 1 Avenal, Kings Co.	10-23-18	412	sd. sh. drilling
Magee & Stone, No. 1 Alpaugh, Kings Co.	34-24-22	5,060	suspended
Dil-Harp Oil Co., No. 1 Delano, Tulare Co.	25-24-26	....	port. outfit
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,092	suspended
Napa Oil Co., No. 1 Griffith, Napa Co.	7- 8- 2	3,273	suspended
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	5- 2-10	4,812	cleaning out
Rushing Oil Co., No. 1 Waterford, Stanislaus Co.	20- 3-13	2,631	suspended
Pacific Northern Oil Co., No. 1 Guinda, Yolo County	23-12- 2	3,045	suspended
Buttes Oilfields Co., No. 1 Marysville, Sutter Co.	35-16- 1	2,731	gas, shut in
Buttes Oilfields Co., No. 2 Marysville, Sutter Co.	34-16- 1	171	sd. drilling
Tehama Pet. Co., well No. 1, Tehama Co.	4-22-15	2,904	gr. sh. drilling
Orland Synd., No. 1 Orland, Tehama Co.	31-23- 3	3,748	suspended
Marker Drlg. Co., No. 1 Orland, Tehama Co.	21-25- 5	3,030	suspended

Increased Activity in Osage Field, Wyoming; Northeast Colorado Test Is Running Higher

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Apr. 17.—Hobbs pipe line runs in March were 952,660 bbls. Humble Oil & Refining Co.'s No. 1 Hardin, edge well at the north of the Hobbs Pool, was deepened 112 feet without any change and is shut down for orders. There were no completions or new locations at Hobbs. The Texas Company's No. 1-B Shepard, in the Jal area, gauged 6,000,000 feet of gas and 150 bbls. of oil at 3,184 feet. One new operation in Chaves County and two in San Juan County were reported.

Continental Oil Co. and others' deep test in northeastern Colorado is running 90 feet higher than the Ramsey gas well on the base of the Timpas. A Pennsylvanian test is to be drilled near Lamar in the southeastern corner of the state and drilling is to be resumed in the Iles Field this summer.

In Wyoming, Governor Miller is receiving favorable responses from state executives on a proposed plan for Federal collection of all gasoline taxes. The Osage Field in Weston County is showing increased activity and operators have agreed not to sell oil for less than $1 per barrel. Two new locations were reported in Washakie County and the Paint Rock structure in Big Horn County is to have a test.

In Montana a snow storm delayed one completion and fire destroyed the rig of another well in the Cut Bank Field. Atlantic-Pacific's No. 1 Kiesel was swabbing 90 to 100 bbls. when the rig caught fire.

NEW MEXICO

Lea County

Pipe line runs from the Hobbs Pool aggregated 952,660 bbls. in March, bringing the total since proration went into effect up to 31,152,851 bbls. There were no completions or new locations reported in the Hobbs Pool the past week. Humble Oil & Refining Co.'s No. 1 Hardin, SW cor. NW Section 18-18-38, an edge well at the north end of the pool half a mile ahead of production, was deepened to 4,359 feet and showed only water on a test. It is shut in for orders. It was originally drilled to 4,247 feet and swabbed 100 per cent water. It was then plugged back to 4,207 feet and swabbed 95 per cent water. It was then drilled deeper in hope of picking up something worth while in a lower horizon, but without results. It probably will be abandoned. Amerada Petroleum Corp.'s No. 3 Hardin, NW cor. SW Section 18-18-38, a south offset to Humble well, which also showed water at a total depth of 4,160 feet, is shut in for orders.

Texas Pacific Coal & Oil Co.'s No. 4-G State, SW cor. NE Section 24-18-37, is drilling at 2,040 feet in salt with 12½-inch cemented at 208 feet with 200 sacks. Stanolind Oil & Gas Co.'s No. 29 Byers, C SW NW Section 3-19-38, is drilling at 1,316 feet in red rock after cementing 16-inch at 216 feet with 100 sacks, and its No. 8 State, C NW NE Section 9-19-38, cemented 16-inch at 217 feet with 100 sacks and is waiting.

In the Eunice area, Atlantic Oil Producing Co.'s No. 1-B State, C NW SE Section 8-21-36, cemented 7-inch at 3,720 feet with 75 sacks and is rigging up cable tools to drill in. It is a south offset to Tidal Oil Co.'s No. 1 State which made 524 bbls. initial when completed last winter at 3,985 feet total depth.

In the Lea area, The Texas Company's No. 3-A Lynch, C NW NE Section 34-20-34, is bottomed at 132 feet where it mudded 16-inch. This location is half a mile north of No. 1 Beulah Lynch, the discovery well, which was completed for 1,000 bbls. initial in 1929. The Texas Company's No. 1-B Lynch, C SW NW Section 34-20-34, northwest of the discovery, which was reported last February to have encountered sulphur water at 3,808 feet, was plugged and abandoned at that depth, and its No. 2-A Lynch, C SE SE Section 34-20-34, was completed at 3,785 feet with an initial production of 205 bbls.

In the Jal area, The Texas Company's No. 1-B Shepard, NW cor. SW Section 5-26-37, tested 6,000,000 feet of gas and 150 bbls. of oil from sand at 3,174-84 feet. Total depth is 3,184 feet. It is a diagonal offset on the southeast to the same company's No. 1 Shepard, which was completed in 1929 at 3,285 feet for 1,000 bbls. initial. E. B. Guess, No. 1 Conditt, C SW SW Section 12-25-36, is shut down at 75 feet for pipe to shut off surface water.

Eddy County

Harry Leonard and Barnsdall Oil Co.'s No. 1 Dodd, SW SE SW Section 22-17-29, Jackson area, is drilling at 2,845 feet in lime and had a show of oil amounting to half a bailer per hour, at 2,346-52 feet. It bradenheaded 6,742,000 feet of gas per day at 2,307 feet and cemented the 6⅝-inch at 2,379 feet. Leonard has the gas and Barnsdall the oil rights in this test.

R. Spearow and others' No. 1 McClellan, SW NW NE Section 22-22-23, Indian Creek, 25 miles west of Carlsbad, is bottomed at 1,528 feet and running the 10-inch.

Chaves County

L. B. Tannehill and others have made a tentative location in Section 11-11s-26, in the Comanche Creek district. It is 6 miles south of a test drilled in 1928 by Cactus Oil Co. to 2,273 feet, and a little more than a mile northeast of a well drilled in 1926 reported good for 4 bbls. per day at 1,240 feet after plugging back.

DeBaca County

Landowners Oil Co.'s No. 1 State, SW cor. NE Section 16-1s-27, Buffalo Creek, is shut down at 5,860 feet for engine repairs. At 5,834-40 feet it cut a dry sand showing neither oil nor water.

Bernalillo County

Norins Realty Co., Inc.'s No. 1 Pajarito, NW cor. NE Section 22-9n-1e, southwest of Albuquerque, is drilling below 4,307 feet in brown sand.

Guadalupe County

Anton Chico Development Co., Ltd.'s No. 1 Anton Chico grant, NE cor. SW Section 20-9n-17, is underreaming 10-inch to bottom at 1,560 feet. It topped the red beds at 1,467 feet.

San Miguel County

Starr-Kennedy Oil Co.'s No. 3 Adams, NE cor. Section 25-17-16, Azul district, which at 5,093 feet dropped 700 feet of 5⅞-inch in the hole several months ago, was unable to fish out the collapsed pipe and is sidetracking at 4,600 feet, having drilled by about 300 feet of junk. Duisenberg Oil Co.'s No. 1 Kroenigs, Section 27-18-18, Watrous district, has steel derrick up, two boilers set and two tanks in place, but had not spudded at last reports. It was scheduled to spud by March 1, but an extension of time was given.

Valencia County

Western Natural Resources Corp., Inc.'s No. 1 San Clements grant, SW cor. NE Section 5-6n-1e, is drilling below 4,360 feet.

San Juan County

Gobernador Oil Co.'s No. 1 Likens, SW NE SW Section 12-29-9w, Blanco district, had a show of gas at 2,250-58 feet. The company is reported being reorganized with Durango, Colo., people in charge. R. R. Burke's No. 2 Government, C NW SW Section 18-21-13, Stoney Butte, is bottomed at 501 feet in shale with a show of oil and running pipe for a water shutoff. Fred Barrett's No. 1 Hart, Section 11-29-11, Fulcher Basin, is drilling below 535 feet, and Lynn McCoy's No. 1, Section 26-29-12w, Bloomfield district, is spudding. Kutz Canon Oil & Gas Co.'s No. 1 Day, SW cor. Section 20-28-10, Kutz Canon, is drilling at 4,070 feet in shale between the upper and lower Mesa Verde.

McKinley County

H. L. Williams and others' No. 4, NW Section 21-18-8w, Hospah district, is setting pipe at 1,741 feet.

COLORADO

Weld County

A feeling of optimism was manifest among the operators who have leases on several hundred thousand acres in the Buckingham-New Raymer district in Weld County, northeastern Colorado, this week when Continental Oil Co. and others' No. 1 Anthes, C NE NE Section 24-8n-59, reached the Timpas lime and found the well running higher than the Ramsey well 5 miles to the south. No. 1 Anthes topped the Timpas at 6,034 feet and went out of it at 6,078 feet, the horizon being 44 feet thick as against 64 feet in the Ramsey well. The last named found the Timpas at 6,200-64 feet. The base of the Timpas is considered the most reliable market. After harmonizing a slight difference in the determinations of the elevation of the two wells, the indications point to No. 1 Anthes running about 90 feet higher. The Ramsey well, No. 1 St. Anthony, SW NE SE Section 15-7n-59, has an elevation of 4,929 feet. The elevation of No. 1 Anthes, used in this calculation, is 4,839 feet, 5 feet higher than shown by some measurements. The Ramsey well had 6,000,000 feet of gas in the Muddy sand at 6,680-6,700 feet and 40 bbls. of oil first 24 hours in the Dakota at 6,760-65 feet, followed by water upon drilling deeper. The Muddy sand may be expected in No. 1 Anthes somewhere around 6,500 feet. It is probable the Muddy will be cored and the hole carried to the top of the Dakota before casing is run and standard tools installed. If the Dakota is productive at this location, it is reasonable to expect the Muddy to carry gas and as the Dakota is the important horizon in disclosing the prospects for the opening of a new field in that area, it is believed time and considerable trouble will be saved by going through the Muddy with rotary bit after coring.

Arapahoe County

MacDeb Drilling Co.'s No. 1 Fitzsimmons, NE Section 7-4s-66, near Aurora, which started drilling in 1926, is bottomed at 6,128 feet and fishing for 4¾-inch pipe. At this depth, according to the drillers, it was in the top of a sand which showed considerable gas and about 50 feet of oil in the hole. There was 188 feet of open hole and it was decided to pull 4¾-inch, straightream and carry it to bottom to stop caving. The casing parted and 3,200 feet dropped. Since then considerable pipe has been recovered in small parts and it is expected that it will be two or three weeks before the fishing job can be finished.

Larimer County

C. Leonard Smith's No. 2 Union Pacific, SW cor. Section 31-12n-69, Sand Creek, is running 8¼-inch pipe at 516 feet, total depth.

Boulder County

Ed Rikhoff and others' No. 1 Blubaugh, SE cor. Section 20-3n-70, Lyons district, formerly carried as Consolidated Smelting & Metals Co., is running 4¾-inch to bottom at 750 feet. It reports a show of oil and gas and the drillers estimate it to be 50 feet off the Sundance. The 6¼-inch was cemented at 368 feet.

Prowers County

A new operation is getting under way near the town of Lamar, in the southeastern corner of the state in Shastatex Oil & Gas Co.'s No. 1 Lotus Oil, NW cor. Section 15-23s-46. Cable tool outfit is being moved in for a 4,000-foot test which is expected to reach the Pennsylvanian. The structure at Lamar has been known for a number of years and two wells were drilled a long time ago, both of which are said to have shown some oil at shallow depths, but did not go deep enough to test the Pennsylvanian.

Fremont County

Cherry Creek Placer Co.'s No. 1 Lucas, SW cor. NE Section 32-18-69, Florence district, is shut down for casing at 1,325 feet, and Dr. T. A. Davis' No. 7 Mojada, NE SW SE Section 21-20-69, is drilling at 1,625 feet in black shale in a 6⅝-inch hole.

Park County

South Park Oil & Gas Co.'s No. 1 Esche, SE cor. NW Section 5-9s-76, Muleshoe district, is bottomed at 2,465 feet and fishing for parted 8¼-inch, and South Park Oil Co.'s No. 1 Milligan, NE cor. SE Section 13-8s-76, Jefferson district, is trucking in supplies from Canon City.

La Plata County

McGarr Petroleum Co. has placed in operation a topping plant in the Long Hollow district and is marketing gasoline in Durango and surrounding territory. It has a complete camp including a cement building for employes. Crude is obtained from its No. 1 Sanchez, NE SE NE Section 27-33-12w, which had an estimated initial production of 50 bbls. from the McElmo at 3,313-20 feet. Rig has been up for some time for No. 1 Pinon Mesa, NE cor. Section 34-33-12w.

Rio Blanco County

California Co.'s No. 1 California-Raven, NW SE Section 30-2n-102, Rangely Dome, which was drilled to 7,173 feet and plugged back to 6,315 feet and shut down, is preparing to resume and make a test of showings in the Weber.

Moffat County

A well is scheduled to be drilled on the east side of the Iles Dome this fall by The Texas Company as a result of a new

contract by that company and the Iles Investment Co. No drilling has taken place at Iles for some time and this well may be put down jointly by The Texas Company and Stanolind Oil & Gas Co. Location has not been released, but it probably will be on the line between Lots 6 and 7, Section 23-4n-92, one-fourth of a mile to the east of the nearest producer. It will be drilled to the Sundance.

WYOMING

Gov. Leslie A. Miller, of Wyoming, submitted to the governors of all the states recently a plan which he believes will halt wholesale tax evasions on gasoline and simplify the collection of taxes. It provides for the Federal Government collecting both state and Federal taxes at the source of gasoline shipments and reapportioning same back to the states on the basis of their gasoline tax rates. Favorable replies have been received from the chief executives of Iowa, Virginia, Idaho, Colorado, New Mexico and Kansas up to last Saturday.

Weston County

The Osage Field in the northeastern corner of the state, which last year was the most active district in Wyoming, again is showing an increase in operations. The field is controlled by numerous small independent operators who find a ready market for their crude in about 22 topping plants within reach of the pool and as a result of the existing conditions have fared somewhat better than other areas in the price obtained for crude. The approach of spring has resulted in an increased demand and the majority of the producers recently entered into an agreement, effective April 1, to sell no crude below $1 per barrel except where contracts already are in force. Crude now is moving freely at the generally accepted price. A movement also is under way for the establishment of a single selling agency for the field through the Osage Oil Producers Association. The details are being worked out by a committee appointed by the association.

General Oil Co.'s No. 1, NE NW SE Section 22-46-64, looks like a good starter for the season's activity. It topped the sand at 2,180 feet and began gassing impressively. The 6⅝-inch was run to that depth and it is waiting for cement to set. Paymac Oil Corp.'s No. 1 Toyne, SE NW NE Section 3-46-64, which was drilled to 1,700 feet last winter without picking up any shows, is preparing to run the 5⅛-inch and drill deeper on the belief that the Muddy was not reached. Jones, Rose & Harberson's No. 3 Thierry, NW SW SE Section 31-46-63, set 8¼-inch through the Greenhorn and is waiting. Federal Oil Co.'s No. 5, SE cor. Section 15-46-64, is still a location. Lincoln Oil Syndicate's No. 1, SW cor. SE Section 10-45-64, is standing at 1,250 feet.

Niobrara County

Interstate Oil & Refining Co.'s No. 1 Morrell, NW NE SE Section 2-39-61, West Mule Creek, is drilling at 2,250 feet.

Natrona County

Mutual Oil Syndicate's No. 1 core test, NE NE Section 23-35-79, Midway Dome, is drilling at 1,400 feet and will be carried to the Shannon sand at 2,400 to 2,500 feet. This sand has shown considerable gas in former tests. This is one of a series of core tests being drilled to work out the structure before starting another well to the deep horizons. It is 700 feet south of the discovery well. Bessemer Oil Co.'s No. 7, NW Section 13-33-82, Poison Spider, has let contract to J. E. Dyke and is preparing to move in. Triangle Oil Co.'s No. 1 Ames, SE cor. Section 29-36-85, North Boone Dome, is drilling at 190 feet. The 8¼-inch was set at 42 feet. Leo B. Murphy and others' No. 1, SE NW Section 29-33-80, North Platte, set the 8¼-inch at 840 feet for a shutoff and is waiting for fuel which was being trucked in when a storm held up the shipment.

Albany County

S. Marvin James & Co.'s No. 1 Hindry, C SW SW Section 10-13-76, Riverside district, is resuming at 315 feet. The 10-inch was set at 40 feet and the 8¼-inch will be set at 500 feet and water at 288 feet will be saved between strings.

Carbon County

Ohio Oil Co.'s No. 1 Hazlett, SW Section 34-23-79, Allen Lake, is rigged and probably will spud May 1, if weather conditions are favorable. Reeder Oil Co., Inc.'s No. 1 Union Pacific, C SW SW Section 19-20-88, Pass Creek, or Overland Dome, is rigged and ready to spud.

Fremont County

Citizens of Riverton and Lander recently held meetings and appointed a committee to call upon Superintendent Haas, of the Shoshone Indian Reservation, to assure him that they were behind him in the recent order issued requiring holders of leases in the Maverick Springs district to begin marketing oil from their shut-in wells by September 1 or face action to cancel the leases, unless extended by special permission of the Department of the Interior. The field has approximately 10,000 bbls. per day of shut-in black oil. The Texas Company, Continental Oil Co., Ohio Oil Co. and Stanolind Oil & Gas Co. are the principal operators. Carter Oil Co. sold its holdings to Midwest Refining Co. several years ago and is reported to have received $360,000 for a 160-acre tract.

The Texas Company's No. 2 State-Ridgway, SE SW SW Section 36-34-95, Alkali Butte, is bottomed at 4,930 feet, after plugging back from 5,460 feet, and will rerun the 6⅝-inch and make a test.

Sweetwater County

Mountain Fuel Supply Co.'s No. 2 Cappers, SW cor. NW Section 12-19-104, is drilling at 600 feet. Same company's No. 2 Mullen, SW NE SE Section 2-17-104, South Baxter Basin, cemented 12½-inch at 230 feet, and its No. 2 Union Pacific, SE cor. NW Section 21-16-104, and No. 3 Poston, C NW SW Section 22-16-104, are still locations.

Washakie County

D. C. McDonald's No. 1 Wheeler, SE Section 30-48-90, Hidden Dome, is spudding, and L. S. Keye and others' No. 1 Bales Oil Trust, NW Section 31-48-90, is moving in a rig close to a small producer completed by the Bales interests last fall.

Big Horn County

A deep test probably will be started at an early date by Dr. F. J. Evans, of Denver, on the Paint Rock Dome, east of the Bonanaza structure. Three wells were drilled on the west flank more than 20 years ago, but none found oil or gas in commercial quantities and did not go deep enough to test horizons which since have proved productive in other fields. The new test will go to the Madison lime at around 3,000 feet. C. T. Lupton, of Denver, geologized the structure and Roy Holloman recently completed a new investigation of its possibilities.

MONTANA

Carbon County

Ohio Oil Co.'s No. 9 Souders, C NE SW Section 2-7s-21, the only active operation at Dry Creek, is drilling at 5,232 feet in hard shale and is believed to be near the top of the Dakota. Same company's No. 13 Schleiderer, C SE NW Section 10-7s-21, and No. 12 Maddox, NE cor. Section 9-7s-21, for which locations recently were made, will not be drilled this year. Permits have been extended by the Department of the Interior without any drilling obligations for this year attached.

Glacier County

Severe weather and a heavy snow storm hindered operations in the Cut Bank area. One completion was delayed by the storm and another by a fire. Alberta-Pacific Consolidated Oil Co.'s No. 1 Kiesel, NE cor. NW Section 11-34-6w, bottomed the Darling sand at 2,850 feet and swabbed 90 to 100 bbls. per day. The rig caught fire on April 10 and was burned. It was a total loss. The firm has a 600-acre tract upon which two wells have been completed, proving the block. Contract calls for continuous operation of one string until the tract is developed with one well to each 40 acres, or 15 wells in all.

Santa Rita Oil & Gas Co.'s No. 1 Blackfeet, C SW NE Section 15-35-6w, set the producing string of 6¼-inch at 2,840 feet and was ready to drill in when the storm compelled a shutdown.

Par Oil Co.'s No. 1 Haines, SE SE Section 2-34-6w, which drilled into the Stewart sand a year ago and was a small producer at 2,785 feet, has rig up and is ready to start cleaning out and going deeper to test the Darling sand. W. E. Burk is in charge. It was taken over by the present operator from the B. & H. Oil Co. Santa Rita Oil & Gas Co. and P. T. Sweeney's No. 1 Jacobson, C NW NW Section 23-37-5w, is drilling at 1,370 feet, and the Alberta-Pacific Consolidated's No. 2 Matson, SE NE SW Section 14-34-6w, is building rig. W. M. Fulton and others' No. 1 Haggerty, NE cor. Section 16-34-6w, is drilling at 2,100 feet, and Hannah-Porter Co.'s No. 1 Britton, NW NE NE Section 23-34-6w, is shut down at 600 feet. R. C. Tarrant's No. 1 Miller, C NE NE Section 24-34-6w, is drilling at 2,110 feet, and his No. 2 Haglund, Jr., C NW SE Section 13-34-6w, is rigging up.

UTAH

Ramsey Petroleum Co.'s No. 1 Senior, C NE SW Section 18-26s-7e, Last Chance Dome, Emery County, is shut down at 320 feet with tools in the hole and is calling for bids for a new contract.

Turner Valley Operators Reported Satisfied With the New Conservation Regulations

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Apr. 15.—Refinery deliveries from the Turner Valley Field for March showed a more than 25 per cent increase over February, deliveries aggregating 48,900 bbls. against 38,807 bbls. The increase was due largely to the new production from Mar-Jon-Freehold's No. 1 in LSD 9, Section 28-18-2w5, which produced 8,113 bbls. It was the largest individual producer in the field for March, Merland Oil Co.'s No. 1 ranking second with 6,357 bbls. Royalite Oil Co. ranked second among producing companies, delivering 6,926 bbls. of naphtha and 189 bbls. of light crude.

Deliveries for Imperial Oil, Ltd., for March aggregated 40,809 bbls. compared with 29,448 bbls. in February. The March deliveries included 16,905 bbls. of crude naphtha, 19,449 bbls. of discolored naphtha and 4,456 bbls. of light crude. Deliveries to Regal Oil & Refining Co. totaled 1,791 bbls. in March against 1,759 bbls., and deliveries to Bell Refining Co. were 6,300 bbls. in March and 7,600 bbls. in February. Production of Mar-Jon-Freehold's No. 1 is going to Imperial, Oil, Ltd.

Turner Valley Conservation

The Alberta legislature has formally approved the resolution introduced by Premier Brownlee with reference to the government's policy on Turner Valley conservation. The gas production is to be restricted to 40 per cent of open flow; all producing wells are to be equipped with meters, and previous regulations prohibiting new drilling into the dolomite limestone are rescinded.

On representation of some of the Calgary members, a proviso was added that the permissible gas volume from all naphtha producing wells in Turner Valley should be maintained within an aggregate of 240,000,000 feet a day. Provision is also made for the work of conservation inaugurated by the Turner Valley Gas Conservation Board being continued under the direction of the technical division of the lands and mines department.

The 240,000,000 feet a day maximum flow does not apparently involve any further restriction so far as the present potential outfit is concerned. The Turner Valley Gas Conservation Board's original proposal suggested a maximum of 200,000,000 feet which has been in force for nearly a year. Early estimates indicated that 40 per cent of open flow would mean a permitted gas flow of 320,000,000 feet a day; but careful figures compiled by W. Calder and F. M. Brewster of the technical division placed the probable flow at 230,000,000 feet a day.

Operators generally appear to be satisfied with the 40 per cent basis, the feeling being that on this basis the wells would be most efficiently operated and the largest possible crude naphtha recovery secured. A somewhat increased crude naphtha recovery is expected.

In the meantime the appeal of Spooner Oils, Ltd., of Calgary from the decision of the Alberta appellate court, which declared the Turner Valley Gas Conservation intra vires, is still to be disposed of by the Supreme Court of Canada. The case will likely be dealt with late in April.

South Turner Valley

In the South Turner Valley Field, LSD 9, Section 28-18-2w5, is maintaining satisfactory production of crude naphtha from the lime at 5,845 feet. The test will be carried into the porous horizon of the lime.

Joint test of Sunburst Oil Co. and Mid-Royal Oils, Ltd., has been definitely located in LSD 14, Section 28-18-2w5, and drilling equipment is being moved from the unfinished Mid-Royal Oils' No. 1 in LSD 4, Section 31-19-2w5, in the central section of the field. Sunburst-Mid-Royal's No. 1 will spud in early in May. Drilling contract has been made with Harry Morgan and Bert Rust, and Ray R. Knight of Vancouver will have general oversight with W. J. Rowley in actual charge. The acreage in Section 28-18-2w5, involved in the deal includes SE LSD 14, N half LSD 11 and SE LSD 12, originally held by Ray R. Knight and taken over by Sunburst Oil Co. The acreage has been favorably reported by P. D. Moore and Stanley J. Davies.

Royalite Operations

The report of the Royalite Oil Co., leading Imperial Oil subsidiary in the Turner Valley Field for 1932 shows net profits of $78,236.75 compared with $257,504.09 the preceding year. The year's income was $1,097,404.51, while disbursements and reserves including $484,869.00 depreciation and depletion amounted to $1,019,167.76. The company handled 9,216,514,000 feet of gas, of which 6,320,384,000 feet were sold to the Canadian

Western Natural Gas Co., 1,626,460,000 feet were stored in the Bow Island Field and the balance sold to Imperial Oil, Ltd., or used as fuel. Revenue from gas sales amounted to $539,140.53. From 10 producing wells the company delivered 1,957 bbls. of light crude oil worth $5,423.80; and 29,237 bbls. of crude naphtha and 59,092 bbls. of discolored naphtha worth $271,895.80. Pipe line earnings and receipts from miscellaneous sources amounted to $190,595.87. While withdrawals were made from surplus to make up the $750,000 dividends paid, the surplus at the end of the year stood at $3,074,098.99. No drilling operations were carried on during the year; nor is any new work foreshadowed.

Dalhousie Oil Co., another Imperial subsidiary, shows for the year sales of 6,423 bbls. of light crude oil, 2,433 bbls. of crude naphtha and 13,793 bbls. of discolored naphtha, and 36,500,000 feet of gas. Revenue included crude oil sales, $17,357.11; naphtha sales, $49,279.80; gas sales, $730; while the net profit was $3,026, bringing the surplus to $31,482.96.

South Area Active

Reports continue of leases changing hands in the far south end of the field, following the securing of large production in Mar-Jon-Freehold's No. 1. The area in which operators appear particularly interested is that following the southeast trend of the structure from Section 28-18-2w5, and considerable interest is being shown in a possible extension of the structure beyond the present "farthest south" drilling in Section 21-18-2w5.

Turner Valley Companies

Among other Imperial subsidiaries in the Turner Valley, Mayland Oil Co. for 1932 showed sales, all graded discolored naphtha, amounting to 55,117 bbls., with gas sales of 37,700,000 feet. The company's income was $173,701 with a profit of $45,151, after deducting all expenses, including depreciation and depletion of $68,138. The surplus was increased to $498,735.

Foothills Oil & Gas Co., another Imperial subsidiary, showed a net loss of $12,333.24 for the year, the total income being $99,197.44 with disbursements of $111,530.68. This amount includes depreciation depletion and bad debt reserves amounting to nearly $69,000. Crude naphtha sales realized $94,250.08 and gas sales $720.

Twin River Test

On the Twin River structure south of Lethbridge, Nordon-Roney's No. 2 Twin River, LSD 11, Section 2-2-20w4, rotary test is drilling a perfectly straight hole below 2,440 feet, working about 1,120 feet below the top of the Colorado. Small pockets of gas have been met but no commercial production; and there has been no trouble with water.

Northern Alberta Test

In the Athabaska district, northern Alberta, Athadome Oils' No. 2, LSD 3, Section 15-66-23w4, is unofficially reported drilling below 1,500 feet, after encountering a considerable gas flow at 1,315 feet. Test is being deepened for oil.

British Columbia Test

In the British Columbia fields, Natural Gas Development Corp. of Vancouver has located its No. 1 test in the Boundary Bay area in Section 34-3-wCM. This is a fractional township abutting on the waters of Boundary Bay about 8 miles due south of New Westminster. Location is close to Boundary Bay Oil Co.'s No. 1 deep test which some years ago was drilled to 4,117 feet. This test got a fair commercial gas production at 2,300 feet, which was later lost; and Natural Gas Development Corp.'s No. 1 is intended to test the gas sand. E. S. Estlin, formerly Natural Gas Commissioner for Ontario, will be field engineer in charge. The company holds about 5,000 acres in the potential gas areas of Boundary Bay and Lulu Island.

Ontario Operations

In Kent County, Ontario, Vacuum Gas & Oil Co.'s No. 5, Lot 53, South Talbot Road, Orford Township, has been abandoned and plugged. It was drilled to 1,617 feet, getting only a small show of gas and some water.

In the old Tilbury Field, Kent County, Glenwood Syndicate's No. 2, NW S half Lot 10, Concession 13, Tilbury East Township, has spudded in.

In Raleigh Township, Kent County, Producers Gas Corp.'s No. 1, Cecil Chinnick farm, Lot 17, Concession 8, has been abandoned. The drilling outfit is being moved to the Stevens farm in Dover East Township, where Raleigh Development Syndicate's No. 1 will be drilled as a test of the Trenton limestone. The location is fairly close to the River Thames and southeast of the Petrol Oil & Gas Co. and Union Gas Co. producers.

Imperial Subsidiaries

Shareholders of three Turner Valley subsidiaries of Imperial Oil, Ltd., held their annual meetings at Calgary. The following directors were re-elected: Dalhousie Oil Co., A. M. McQueen, J. H. McLeod, Alexander Hannah, representing the Imperial interests, and A. C. Newton and N. Christie representing minority interests. Foothills Oil & Gas Co., Alexander Hannah, J. H. McLeod, C. M. Moore, E. H. Teagle, T. E. Burns. South West Petroleum Co., J. H. McLeod, Alexander Hannah, E. H. Teagle, Manning Doherty and O. B. Hopkins.

Wildcat Operations in Southwest Texas

(Continued from Page 50)

Tipton's No. 1 Gembler, 514 ft. from W line, 616 ft. from N line of 120-ac. tract in M. Gotari Sur. ..... Spudded in.
Milo Trussell's No. 1 K. K. Harring, in J. Cantu Sur. .. T.D. 1,011 ft; tested gas; drlg. Deeper.

BLANCO COUNTY

H. T. McGee's No. 1 Glasscock, center Sur. 167 ..... T.D. 1,500 ft; drlg.

CALDWELL COUNTY

Fred Adams' of Lockhart No. 1 Robertson, 450 ft. from N and W lines of Robertson 100-ac. tract in John Neill Sur. ..... T.D. 2,222 ft; abd.
F. L. Thomson's No. 1 Lawler, 150 ft. from NW line, 150 ft. from E of road in James Berry Sur. ..... Moving in.

DUVAL COUNTY

Ed Leach et al's No. 1 C. J. Bain, 330 ft. to S line, 330 ft. to E line of NW SW of Sur. 264 ..... T.D. 1,500 ft; drlg.
Newton et al's No. 1 Welder-Wood, 5,550 ft. from W line, 4,590 ft. from N line of Sur. 102 ..... T.D. 2,617 ft; abd.
Smith & Hunter's No. 1 Olivarez, 1,640 ft. from N line, 940 ft. from W line of Sur. No. 80 ..... T.D. 3,240 ft; drlg.
Wm. B. Stewart's No. 1 Duval County Ranch Co., 990 ft. to S and E lines, of NE of Sur. 362 ..... T.D. 2,310 ft; pulling liner.
Wm. B. Stewart's No. 2 Duval County Ranch Co., 330 ft. from N and W lines of N½ SW of Sur. 362 .. T.D. 1,576 ft; set csg.
Whisenant & Trenchard's No. 1 Duval County Land Co., 1,750 ft. from N line, 1,100 ft. from E line of Sur. No. 76 ..... Spudded in.
Wright & Wilson's No. 1 Wood-Welder, 6,150 ft. from N line, 7,200 ft. from W line of Sur. No. 102 ..... Moving in.

FRIO COUNTY

James E. Greenlee's No. 1 W. W. Burns, 612 vrs. to N line, 900 vrs. to W line of Antone Hutzler Sur. ..... T.D. 2,330 ft.; in shale; waiting for csg.

GUADALUPE COUNTY

Luling O. & G. Co.'s No. 1 Schueneman, 450 ft. from S line, 150 ft. from W line of 130-ac. tract in B. Fuqua Sur. ..... Spudded in.
Magnolia Pet. Co.'s No. 1 E. W. Williams, 200 ft. from N and E lines of 100-ac. tract in Green DeWitt Sur.. Rigging up.
Buckley Bros.' No. 1 M. T. Howell, 2,500 ft. S of road, 187 ft. from E line of tract in Jacob Darst Sur. .... Moving in tools.

HIDALGO COUNTY

Carl & Johnston's No. 1 Doughty, 187 ft. from S and E lines of Lot 11, Blk. 5 of Subd. of Indios Ranch Sur. in N. Hidalgo ..... T.D. 1,464 ft; drlg.
Nat G. Martin's No. 1 Garcia Land & Cattle Co., 150 ft. N of cen. of Military Highway, 155 ft. from W line of Porcion No. 42, Jurisdiction Reynosa ..... T.D. 1,300 ft; S.D.

JIM WELLS COUNTY

Magnolia Pet. Co.'s No. 2 A. A. Seeligson, 2,000 ft. from E line, 150 ft. from S line of V. Canales Sur. No. 218 ..... T.D. 3,353 ft; comp. 100 bbls. dly.

JIM HOGG COUNTY

Cole Pet. Co.'s No. 1 E. Vela Hrs., 5,184 ft. from E line, 2,762 ft. from S line of Sur. 585 in El Peyote grant ..... T.D. 2,180 ft; drlg.
D. C. DeWitt's No. 1 A. G. Lopez, 3,475 ft. from W line, 425 ft. from N line of Sur. No. 106 ..... Spudded in.

KARNES COUNTY

W. R. Campbell's No. 1 E. C. Gillett, 2,594 ft. from SE line, 810 ft. from SW line of 391.5-ac. tract in C. Martinez Sur. ..... T.D. 2,418 ft; abd.
Magnolia Pet. Co.'s No. 1 C. G. Porter, 250 ft. from W line, 1,650 ft. from S line of 1,362-ac. tract and survey in S. Morris Sur. ..... T.D. 1,800 ft; drlg.
The Texas Co.'s No. 1 Stewart, 500 ft. from NE line, 5,650 ft. from SE line of Asa Mitchell Sur. ..... T.D. 2,860 ft; drlg.

KERR COUNTY

J. E. Anderson's No. 1 J. D. Witt, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 1,023, in Hamilton Sur., 4 miles S of Center Point ..... T.D. 795 ft; drlg.

LIVE OAK COUNTY

Duval Oil Corp.'s No. 1 Border National Bank, 5 miles E of Jacob Pool ..... T.D. 1,002 ft; abd.
Jacob, Buzzini & Pickett's No. 1 O. M. Withers, 920 ft. to N line, 370 ft. to W line of Farm 10, McCowan ranch ..... Set surface csg.
Homer T. Lamb's No. 1 J. T. Brown, 150 ft. from N line, 2,450 ft. from W line of 692-ac. tract in M. Hely Sur. ..... T.D. 1,204 ft; in sand; to make D.S. test.
R. P. Whitfield's No. 1 Drummond, 650 ft. from S line, 1,440 ft. from E line of 300-ac. tract in John Carrington Sur. ..... T.D. 1,664 ft; abd.

LEE COUNTY

Paton Bros.' No. 1-B Turner, 424 ft. from NW line, 375 ft. from NE line of 51.9-ac. tract in David Hudson Sur. ..... T.D. 1,550 ft. in sidetracked hole.

McMULLEN COUNTY

Jaqua & Crow's No. 1 Hagist, 330 ft. from N and W lines of R. W. Mills Sur. No. 467 ..... T.D. 2,380 ft; tested S.W.; drlg. ahead.
Greenwood & Calvert's No. 1 G. A. Booth, 3,200 ft. from NW line, 7,000 ft. from SW line of 4 miles SW from Calliham ..... T.D. 1,625 ft; abd.
C. R. Pope, Inc.'s No. 1 A. C. Miles, 200 ft. to E line, 2,375 ft. to S line, Sur. 149 ..... T.D. 465 ft; drlg.
S. R. C. Oil Co.'s No. 1 La Chusa, 1,320 ft. to S and E lines of Sur. 47 ..... T.D. 3,012 ft; abd.
Tarver & Nance Co.'s No. 2 Dickson Farm Mrtg. Co., 700 ft. due W of No. 1, 900 ft. from NE line, 300 ft. from SE line of survey, Sec. 45 ..... T.D. 682 ft.; changing rigs.

NUECES COUNTY

John F. Camp's No. 1 King, 150 ft. from N and W lines of B½ Sec. 29 of Richard King Subd. Sur. .. Derrick.

STARR COUNTY

S.&B. Oil Co.'s No. 1 Crown Brick & Tile Co., 1,800 ft. S of State Highway No. 4 and 580 ft. from W line of Porcion 87, near La Puerta ..... T.D. 4,530 ft; setting csg.
W. P. Chancellor's (Bryan & Tharp) No. 1 A. Guerra, 26,000 ft. from line, 2,600 ft. from E line of Share No. 6 of San Jose grant, in NE cor. of county ..... T.D. 1,410 ft; waiting for tools.
Chiquita Oil Co.'s No. 1 Starr County Cattle Co., 341 ft. from W line, 371 ft. from S line of Share 60, Partition of Porcions 88 and 89 ..... T.D. 618 ft; drlg.
F. R. Cooper's No. 1 J. M. Martinez, 150 ft. to S and E lines of A.B.&M. Sur. No. 135 ..... T.D. 2,000 ft; changing to rotary.
Goodwin & Yantis' No. 1 Walker, 450 ft. SE of W line of Isabel Lopez property in Sur. 767 ..... T.D. 1,300 ft; drlg.

UVALDE COUNTY

Evans & Thompson's No. 1 Farris, 400 ft. from S and W lines of 535-ac. tract near center of John J. Hammond Sur. ..... T.D. 300 ft; changing rigs.

WEBB COUNTY

Earl Calloway et al's (Osborne) No. 1 Gates, 320 ft. from N and W lines, SE Sec. 14, Blk. 1 (Gates ranch), C.C.S.D.&R.G.N.G.R.R. Sur. ..... T.D. 1,728 ft; drlg.
Cole Pet. Co.'s No. 1 A. Villareal, 330 ft. from S and W lines of Sur. No. 1,090, 5 miles E of Oilton ..... T.D. 2,608 ft; drlg.
Edwin M. Jones' No. 1 Callaghan, 1,650 ft. from E line, 990 ft. from S line of Sec. 603 of B.S.&F. Sur., 13 miles E from Callaghan Switch ..... Spudded in.
Gibson et al's No. 1 Smith, 150 ft. from NE line, 300 ft. from NW line of Blk. 5, Sur. No. 1,102 ..... Rigging up.
Will Ohlhausen's No. 1 Moses Jones, 273 varas from E line, 516 varas from S line of 100-ac. tract in Sur. No. 1,640 ..... Spudded in.
Seagraves & Salsbury's No. 1 A. E. Gates, 3,330 ft. from S line, 725 ft. from W line of Sec. 66, Blk. 1, C.C.S.D.&R.G.N.G. Sur. ..... T.D. 1,685 ft; drlg.
Shankle & Roche's No. 1 W. W. Stell, 660 ft. from N and W lines of NW NW of No. 37 Sur., 11 miles N from Mirando City ..... Rigging up.
Taft & Campbell's No. 1 Withers, center Sur. 23, in NE part of county ..... Spudded in.

WILSON COUNTY

Sexton Pet. Co.'s No. 1 Joe Gutsell (1,032-ac.), 150 ft. from W line, 150 ft. from S line of road of F. Flores No. 18 Sur. ..... T.D. 175 ft; drlg.

ZAPATA COUNTY

Hamilton, Brower & Crow's No. 1 Slator, 2,111 ft. from SW line, 1,980 ft. from SE line of Blk. 1, Subd. of Slator ranch in J. V. Borrego grant ..... T.D. 1,246 ft.; standing.
O. W. Killam's No. 4 Bruni, 150 ft. from NW line, 1,172 ft. from NE line, Blk. 63, Killam Subd. Borrego grant ..... T.D. 300 ft; drlg.
A. C. Savoy et al's No. 1 Flores, 150 ft. from NW line, 206 ft. from NE line of Blk. 8, Share 1 of P. A. Richer Subd. of Porcion No. 36 ..... T.D. 800 ft; standing.
A. H. Wray's No. 1 Gopher Trust Est., in Fullerton Subd. of Share 8 of J. V. Borrego grant ..... T.D. 310 ft; drlg.

ZAVALA COUNTY

Zavala O. & G. Co.'s No. 1 Gates, 1,320 ft. from N line, 1,220 ft. from E line of Hooper & Wade Sur. No. 13.. T.D. 5,305 ft; drlg.

Southwest Texas Proven Areas

Week Ending April 15

HILBIG POOL—BASTROP COUNTY

Company, well, farm name, section and block—	Remarks:
Humble O. & R. Co.'s No. 1 Peter Goertz, 1,360 ft. to W line, 415 ft. to N line of 100-ac. tract	T.D. 2,607 ft; abd.
Humble O. & R. Co.'s No. 1 Osborne, 330 ft. from N and W lines of 63-ac. tract	T.D. 2,662 ft; abd.
Humble O. & R. Co.'s No. 2 Wolfensbarger, 330 ft. from S and W lines of tract	T.D. 2,611 ft. in dry Serpentine.

RIDDLE POOL—BASTROP COUNTY

Witherspoon Oil Co.'s No. 1 A. D. Harris, 1,650 ft. from NW line, 2,950 ft. from SW line of John Maxmilian Sur. ..... Rigging up.

TULETA POOL—BEE COUNTY

Aztec Oil & Roy. Co.'s No. 2 Taylor, 1,400 ft. from N line, 330 ft. from E line, W½ NW Sec. 18, Ragsley Subd. ..... T.D. 4,113 ft; testing.

Grisham et al's No. 1 Rapp & Hatch, center of SW 40 acres of 217.5-ac. tract in Sec. 13 of Jose Maria Uranga Grant Sur. ..... Rigging up.

NORTH GOVERNMENT WELLS—DUVAL COUNTY

W. T. Daniels' No. 1 F. J. Smith, 330 ft. from N and W lines of SW of NE of Sur. No. 46 ..... T.D. 2,211 ft; set csg.; W.O.C.

Navarro Oil Co.'s No. 4 Hahl, 340 ft. from S and W lines of W half of Sur. No. 360 ..... T.D. 2,293 ft; running tubing.

Navarro Oil Co.'s No. 5 Hahl, in SW of Sur. 360 ..... T.D. 1,055 ft; drlg.

Reynosa Oil Co.'s No. 5 C. W. Hahl, 330 ft. to N line, 990 ft. to W line of N½ of NE of Sur. 42 ..... T.D. 2,307 ft; running liner.

Reynosa Oil Corp.'s No. 6 Hahl, 330 ft. from N line, 1,650 ft. from W line of N½ NE of Sur. No. 42 ... T.D. 1,125 ft; drlg.

Southwest Drlg. Co.'s No. 9 Wendt, 990 ft. from S and E lines of SE of Sur. No. 43 ..... Rigging up.

The Texas Co.'s No. 4 H. Wendt, 330 ft. from N line, 990 ft. from E line of N¾ of NW of Sur. No. 42.... T.D. 300 ft; drlg.

The Texas Co.'s No. 7 Johnson, 990 ft. from E line, 330 ft. from N line of S½ NW 3-4 Sur. No. 42.... T.D. 2,258 ft; running liner.

PETERS POOL—DUVAL COUNTY

Shasta Oil Co.'s No. 2 Peters, 330 ft. from N and W lines of S of W 200 acres of S½ of Sur. No. 175.... T.D. 110 ft; drlg.

Shasta Oil Co.'s No. 1-B Peters, 990 ft. from W line, 330 ft. from N line of NW SW Sur. No. 176 ..... T.D. 2,707 ft; P.B. to 2,523 ft.

SARNOSA POOL—DUVAL COUNTY

Atravasada Oil Co.'s No. 1 P. Henrandez, 330 ft. to NW and SW lines of E half of Sur. 574 ..... T.D. 2,488 ft; rigging up to pump.

Magnolia Pet. Co.'s No. 2 M. Ruiz, 330 ft. from SW and SE lines of Sur. No. 574 ..... T.D. 2,425 ft; comp. 100 bbls. dly.

SAL-MAR POOL—GUADALUPE COUNTY

Sal-Mar Oil Co.'s No. 1 Chas. Woehler, 1,040 ft. from N line, 300 ft. from E line of G. W. Williams No. 46.. Rigging up.

SANDIA POOL—JIM WELLS COUNTY

Crude Oil Royalty Co.'s No. 1 Allen (first carried as Hughes & Long's No. 1 Wade), Csa. Blk. 2, Wade ranch ..... T.D. 2,100 ft; S.D.

JACOB POOL—McMULLEN COUNTY

Jacob, Buzzini & Pickett's No. 11 Jacob, 160 ft. from most westerly SE line, 1,542 ft. from NE line of Jacob Sur. No. 8 ..... T.D. 982 ft; swabbing.

SAKET FIELD—NUECES COUNTY

C.N.T. Co.'s No. 1 L. M. Vance, 330 ft. from E line, 1,320 ft. from S line of 255-ac. tract in Sur. 402.. T.D. 3,340 ft; drlg.

Gibson Oil Co.'s No. 2 Rand Morgan, 1,320 ft. from N line, 330 ft. from E line of lease ..... T.D. 4,949 ft; coring.

Gulf Port Oil Co.'s No. 3 Frank Bliss, 1,699 ft. to N line, 350 ft. to E line of 235-ac. tract in J. W. Stevens Sur. No. 406 ..... T.D. 4,888 ft; drlg.

Gulf Port Oil Co.'s No. 8 Humphreys, 115 ft. from N line, 330 ft. from W line of lease (S offset to No. 1 Gibson, Rand Morgan Sur.) ..... T.D. 325 ft; drlg.

Gulf Port Oil Co.'s No. 1 Rand Morgan, 330 ft. from N and E lines of 80-ac. lease ..... T.D. 4,905 ft; drlg.

Shasta Oil Co.'s No. 1 Erigan, on N end of 10-ac. strip, W of Quiros tract ..... T.D. 2,600 ft; drlg.

Sinclair Prairie's No. 1 Issences, 330 ft. from N and W lines of 80-ac. tract in Sur. No. 404 ..... T.D. 760 ft; drlg.

MATHIS POOL—SAN PATRICIO COUNTY

Geo. W. Scruggs' No. 1 Collins ..... T.D. 1,515 ft; drlg.

WHITE POINT FIELD—SAN PATRICIO COUNTY

Sarat Oil Co.'s No. 19 Rachel ..... T.D. 7,304 ft; P.B. to 4,875 ft.

LOS OLMOS POOL—STARR COUNTY

Rooks & Weavers' No. 14-A2 Kelsey Bass, 200 ft. from W line, 250 ft. from S line of E 20 acres of NE SW Sec. 4, Pors. 75, 76, 77, Camargo ..... Drlg. 1,368 ft; moving in larger rig.

RIO GRANDE CITY—STARR COUNTY

Ed Caggett's No. 1 Ida Davis, 150 ft. from S line, 1,250 ft. from W line, Share 4, Porcion 81, in Camargo Sur. ..... T.D. 1,600 ft; being carried to 2,500 ft. by J. A. Myers.

Sioux Oil Co.'s No. 4 Goodrich, 975 ft. from W line, 662 ft. from N line, Blk. 1, Tract 5, Porcion 81, Camargo ..... T.D. 1,470 ft; recementing csg.

LAUREL POOL—WEBB COUNTY

Montex Oil Co.'s No. 1 Garcia & Villareal, 150 ft. from NW and SW lines of W half of S half of Blk. 14, Sur. 720 ..... T.D. 2,420 ft; drlg.

Shankle & Newton's No. 1 S. Benavides, 330 ft. from S and E lines of Blk. 13, in No. 2,372 Sur. ..... T.D. 40 ft; set surface csg.; W.O.C.

South Texas Oil Co.'s No. 15 Laurel (Rosenberg), 750 ft. from S line, 611 ft. from E line of Blk. 16 in No. 271 Sur. ..... T.D. 2,212 ft; drlg.

South Texas Oil Co.'s No. 14 Laurel (Rosenberg), 231 ft. from W line, 450 ft. from S line of Blk. 16, Sur. No. 271 ..... T.D. 2,205 ft; 50 bbls. daily.

Sal-Mar Oil Corp.'s No. 1 Vela, 660 ft. from NW and SW lines of Blk. 16, Sur. No. 1,011 ..... T.D. 2,566 ft.; drlg.

MOCA POOL—WEBB COUNTY

Moca Oil Co.'s No. 3 Duval County Ranch Co., 170 ft. from W line, 1,110 ft. from N line of Blk. 22, Share 8 of Zapata County School Land Sur. ..... T.D. 896 ft; in sand; setting csg.

Whitesmant & Trenchard's No. 1-A Duval County Ranch Co., 650 ft. to N line, 150 ft. to W line of Blk. 13, Sur. 101 ..... T.D. 903 ft; drlg.

ESCOBAS POOL—ZAPATA COUNTY

Lefevre et al's No. 1 M. Garza Hrs., 330 ft. from NW and SW lines of Blk. 53, C. A. Douglas Subd., Zerro ranch, Comitas Grant Sur. ..... T.D. 1,630 ft; drlg.

R. W. Roscoe's No. 3 Bustamente, 300 ft. from NE line, 375 ft. from NW line of SE of Share 33, Comitas grant ..... T.D. 1,240 ft; set csg.

MARTINEZ POOL—ZAPATA COUNTY

F. H. Neilson's No. 1 A. Trevino, 300 ft. from S line, 770 ft. from E line of Blk. 10, Sur. No. 421..... T.D. 2,025 ft; coring.

Gulf Coast Fields and Wildcats

(Continued from Page 52)

Texas Gulf Prod. Co.'s No. 1 O. K. Winfree (W.O.), W. D. Smith Sur., 50 ft. from S line, 100 ft. from W line of tract ..... T.D. 5,512 ft; sidetracked 4,510 ft; coring sand 4,872 ft.

Yount Lee Oil Co.'s No. 20 Chambers County, Wm. Bloodgood Sur., 150 ft. N of No. 3 and 50 ft. E of W line ..... Drlg. shale 6,110 ft.

Yount Lee Oil Co.'s No. 21 Chambers County, Wm. Bloodgood Sur., 175 ft. N of No. 20 and 50 ft. E of W line ..... Drlg. salt 5,821 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 17 Mayes, F. H. R. Wallis Sur., 400 ft. NE of No. 14 ..... Cored sand showing oil 2,920 ft; making D.S. test.

RABBS RIDGE—FORT BEND COUNTY

Cullen & West's No. 1 Whitemore, Samuel Kennedy Sur., 231 ft. W of E line, 467 ft. N of S line of lease.. Drlg. shale 5,220 ft.

Gulf Prod. Co.'s No. 6 Jack Gubbels, Samuel Kennedy Sur., 1,758 ft. along E line from SE cor. and 2,371 ft. W at right angles ..... Comp. 60 bbls. per hr.; ¾-in. choke, 5,300 ft.

Gulf Prod. Co.'s No. 3-A Mary Gubbels, Samuel Kennedy Sur., 1,457 ft. S along E line from NE cor. and 422 ft. W at right angles ..... Drlg. gumbo 2,147 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 13-A F. I. Booth, Samuel Kennedy Sur., 125 ft. E along S line of Mary Gubbels "A" lease and 485 ft. S at right angles ..... Drlg. shale 2,266 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 6 T. R. Booth, 6,182 ft. E along N line of John Rabb Sur., from NW cor. of E½ and 2,464 ft. S at right angles.. T.D. 5,300 ft; comp. 50 bbls. per hr.; ¾-in. choke.

Humble O. & R. Co.'s No. 3 Mary Gubbels, Samuel Kennedy Sur., 1,460 ft. from S line, 632 ft. from E line of lease ..... Drlg. shale 3,049 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 8 Lockwood, J. Rabb Sur. ..... Comp. 54 bbls. per hr.; ¾-in. choke, 5,300 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 9 Lockwood, J. Rabb Sur., 6,266.5 ft. from W line, 311.6 ft. from N line of tract ..... Comp. 60 bbls. per hr.; ¾-in. choke, 5,300 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 10 H. P. Lockwood, J. Rabb Sur., 7,583.5 ft. from W line, 311.5 ft. from N line ..... Cmtd. 7-in. (O.D.) csg. 4,973 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 11 H. P. Lockwood, J. Rabb Sur., 9,050 ft. from W line, 311 ft. from N line of lease ..... Drlg. lime 4,125 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 12 H. P. Lockwood, John Rabb Sur., 7,035 ft. from W line, 300 ft. from S line of lease ..... Drlg. lime 4,355 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 14-A Lockwood & Sharp, J. Rabb Sur., 4,173 ft. from W line 536 ft. from S line of lease ..... Drlg. shale 3,672 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 17-A Lockwood & Sharp, John R. Rabb Sur., 833 ft. E of No. 16 ..... Drlg. shale 3,206 ft.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 35 Moore, Mark Smith Sur. ..... No report.

SUGARLAND—FORT BEND COUNTY

Koimm Prod. Co.'s No. 1 Peterson, Wm. Littel Sur., 100 ft. SE, 100 ft. SW of NE cor. of tract ..... T.D. 3,756 ft; ran 2½-in. tubing; swabbing.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 3 Broussard, M. Dunman Sur., 150 ft. E of center of W line of tract ..... D.S. stuck 6,158 ft.

Yount Lee Oil Co.'s No. 34 Cade, N. Fitzsimmons Sur., 866 ft. S of No. 33 ..... T.D. 5,304 ft; cmtd. csg.

Yount Lee Oil Co.'s No. 35 Cade, N. Fitzsimmons Sur., 600 ft. S of No. 34 ..... Drlg. shale and lime 3,510 ft.

Yount Lee Oil Co.'s No 15 Smith, Martin Dunman Sur., 1,623 ft. from NW line, 315 ft. from SW line ..... Drlg. lime 3,450 ft.

Yount Lee Oil Co.'s No. 16 Smith, Martin Dunman Sur., 300 ft. SE of No. 12 and parallel to land line ..... Drlg. gumbo 2,625 ft.

ARIOLA—HARDIN COUNTY

Republic Prod. Co.'s No. 2 Ariola fee, Ariola Sur., 400 ft. S of No. 1 ..... Drlg. shale 3,759 ft.

BATSON—HARDIN COUNTY

Danciger O. & R. Co.'s No. 1 Hooks, 95 ft. S, 150 ft. W of NE cor. of Strip 13, Donoghue Sur. ..... Drlg. shale 3,926 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 95 Jordit, Jordit Sur. ..... N of No. 90 ..... Sand 620-44 ft; set screen.

MYKAWA—HARRIS COUNTY

Crown-Framer Oil Co.'s No. 4 Minnetex, 165 ft. S, 120 ft. W of NE cor. of Blk. 193, Wm. Lovett Sur. ..... Set 48 ft. of 7-in. screen 4,913 ft. with 2½-in. tubing to top; flowed small amount of oil; setting inside screen.

PIERCE JUNCTION—HARRIS COUNTY

Rio Bravo Oil Co.'s No. 14-A Settegast, J. Kopman Sur.. Cutting and pulling screen to W.O. 5,365 ft.

Rock Drlg. Co.'s No. 1 Herman Est., J. Kopman Sur. No. 44, 788 ft. from E line, 38 ft. from N line of tract ..... No report.

EMPERSON—LIBERTY COUNTY

Cranfill-Reynolds Co.'s No. 10 Moore's Bluff, M. Duncan Sur., 1,800 ft. from E line, 2,100 ft. from N line of 633-ac. tract ..... T.D. 7,077 ft; trying to clean screen.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 1 Crowe & Jacobs, H.&T.C. Sur., Sec. 21, 900 ft. from W line, 1,700 ft. from S line of N 320 ac. of section ..... Drlg. gumbo 1,725 ft.

HULL—LIBERTY COUNTY

Aberell Oil Co.'s No. 1 Barrow, Jesse Devore Sur., 64 ft. from N line, 700 ft. from E line of 10-ac. tract.. D.S. stuck 6,462 ft.

Eclipse Oil Co.'s No. 1 Gordon, Jesse Devore Sur., 50 ft. S, 50 ft. W of NE cor. Empire 13 acres ..... Drlg. shale 4,610 ft.

Edwards Drlg. Co.'s No. 1 Noble & Lynd, Jesse Devore Sur., 294 ft. from W line, 137 ft. from S line of 5-ac. lease ..... T.D. 3,564 ft; cutting and pulling screen to deepen.

Houston Prod. Co.'s No. 2 Baldwin, Jesse Devore Sur., 50 ft. from S line, 50 ft. from E line of lease ..... T.D. 5,427 ft; comp. flowing 2,600 bbls. daily; ½-in. choke.

Jack Modisette's No. 1 Taylor, Jesse Devore Sur. ..... Drlg. gumbo 1,675 ft.

CONROE—MONTGOMERY COUNTY

Alpha Oil Co.'s No. 3-A Krohn, S. H. Bryan Sur., 791 ft. N of No. 3-A ..... Sand 5,103-40 ft; comp. 90 bbls. per hr.; ½-in. choke.

Alpha Oil Co.'s No. 2-C South Tex. Dev. Co., T.&N.O. Sur. No. 13 ..... Comp. 53 bbls. per hr.; ¾-in. choke, 5,050 ft.

Amerada Pet. Corp.'s No. 1 Hall-Crump, C. A. West Sur., 340 ft. from S line in center of 20-ac. lease E and W ..... Derrick.

A. & P. Prod. Co.'s No. 1 Keystone Mills, A. Steele Sur., 466 ft. from N line of 40-ac. lease in center, E and W ..... Sand 5,090-5,118 ft.; comp. 110 bbls. per hr.; ½-in. choke.

A. & P. Prod. Co.'s No. 2 Keystone Mills, A. Steele Sur., 466 ft. from S line of 40-ac. lease in center E and W ..... Drlg. sand and shale 350 ft.

Bishop Oil Co.'s No. 1 South Tex. Dev. Co., T.&N.O. Sur. No. 5, 574 ft. from N line, 379 ft. from W line of 20-ac. tract ..... Comp. 60 bbls. per hr.; ¼-in. choke, 5,120 ft.

Butler & Horne's No. 1 South Tex. Dev. Co., T.&N.O. Sur. No. 5, 350 ft. from W line, 234 ft. from S line of lease ..... Drlg. shale and lime 4,710 ft.

Feltex Oil Co.'s No. 1 Kirby-Bertrand, Wagers Sur., 1,267 ft. S of No. 1, in center of tract E and W.... Rig.

Feltex Oil Co.-Kirby Pet. Co.'s No. 5 Folson, G. W. Wagers Sur., 466 ft. from S line in center of lease E and W ..... Losing returns 260 ft.

Giesecke & Craft's No. 1 Granger, T.&N.O. Sur. No. 14, 467 ft. out of NW cor. of 77-ac. lease ..... Spudded.

Gulf Coast Drlg. & Prod. Co.'s No. 1 Bertrand, G. W. Wagers Sur., 466 ft. out of NE cor. of lease ..... Drlg. shale 3,210 ft.

Gulf Coast Drlg. & Prod. Co.'s No. 1 E. E. Hensley, A. Steele Sur., 486 ft. from W line, 466 ft. from S line of 44 acres ..... Derrick.

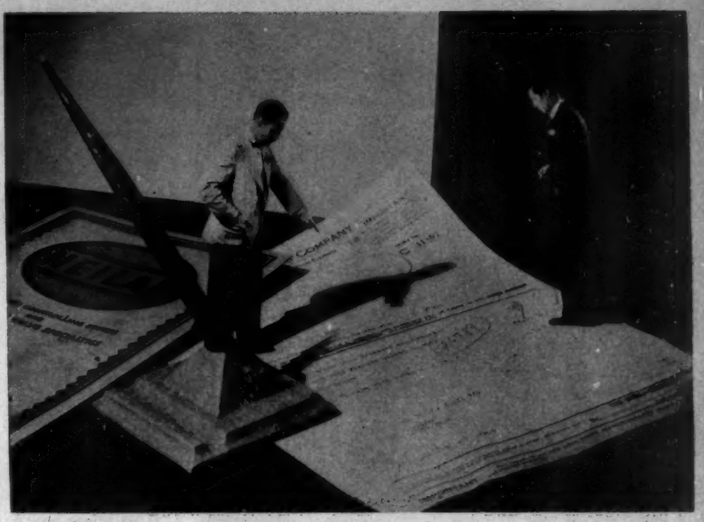
Gulf Coast Drlg. & Prod. Co.'s No. 3-B Keystone Mills, A. Steele Sur. ..... Drlg. shale 4,264 ft.

Gulf Coast Drlg. & Prod. Co.'s No. 7 Keystone Mills, 466 ft. from N and W lines of A. S. James Sur. ... Sand 5,032-72 ft; comp. 95 bbls. per hr.; ½-in. choke.

Gulf Coast Drlg. & Prod. Co.'s No. 8-A Keystone Mills, A. S. James Sur., 933 ft. NE of No. 7-A and 466 ft. from NW line of lease ..... Spudded.

Hamill & Smith's No. 1 South Tex. Dev. Co., T.&N.O. Sur. No. 13, 841 ft. from W line in center, N and S of 10-ac. tract	Cmtd. 10¾-in. csg. 1,324 ft; T.D. 1,330 ft.
Harrison & Abercrombie's No. 2 Arthur Wiggins, T. M. Wiggins Sur., 300 ft. from W line, 466 ft. from S line of lease	Cmtd. 10¾-in. csg. 1,227 ft.
Harrison & Abercrombie's No. 3 Ben Wiggins, T. M. Wiggins Sur., 1,431 ft. from N line of survey, 360 ft. from E line of lease	T.D. 5,159 ft; plugged to 4,018 ft; sidetracked 3,966 ft; coring 4,-840 ft.
Harrison & Abercrombie's No. 2 Massey, T.&N.O. Sur. No. 16, 1,285 ft. from N line, 466 ft. from W line	Comp. 15 bbls. per hr.; ¼-in. choke, sand 5,022-81 ft.
Harrison & Abercrombie's No. 3 John Massey, John Massey Sur., 330 ft. from N line, 1,269 ft. from W line of Sur.	Derrick; moving in rig.
Hi-Grade Oil Co.'s No. 1 South Tex. Dev. Co., T.&N.O. Sur. No. 5, 360 ft. from N line, 207 ft. from W line of lease	Cmtd. 10¾-in. csg. 350 ft.
L. L. Horne Oil Co.'s No. 1 South Tex. Dev. Co., T.&N.O. Sur. No. 5	Drlg. shale 3,926 ft.
Houston Oil Co.-Tide Water Oil Co.'s No. 2 Dobbins, Ransom House Sur., 425 ft. from N line, 1,503 ft. from W line	Cmtd. 10¾-in. csg. 1,316 ft.
Houston Oil Co.-Tide Water Oil Co.'s No. 5 Dobbins, Ransom House Sur., 425 ft. from N line, 466 ft. from E line	Cmtd. 15½-in. csg. 310 ft; started blowing out around outside of csg.; cmtd.
Houston Oil Co.-Tide Water Oil Co.'s No. 2 Moore, Lemuel Smith Sur., 250 ft. from N line, 456 ft. from W line of the 100-ac. lease	Derrick.
Humble O. & R. Co.'s No. 3 B. E. Jones, Lemuel Smith Sur., 500 ft. from E line, 375 ft. from S line	Sand 5,133 ft; cmtd. 7-in. csg. 5,-029 ft.
Humble O. & R. Co.'s No. 3 T. B. McComb, Lemuel Smith Sur., 466 ft. out of SW cor.	Sand 970 ft; cmtd. surface pipe.
Humble O. & R. Co.'s No. 33 Madeley, Ransom House Sur., 1,044 ft. E of No. 32	Sand 5,052 ft; cmtd. 7-in. csg. 5,-030 ft.
Humble O. & R. Co.'s No. 35 Madeley, Ransom House Sur., 425 ft. from S line, 266 ft. from W line	Drlg. shale 1,260 ft.
Humble O. & R. Co.'s No. 24 Moore, Lemuel Smith Sur., S offset Tide Water Oil Co.'s No. 1 Eichletz	Comp. 71 bbls. per hr.; ½-in. choke, 5,062 ft.
Humble O. & R. Co.'s No. 25 Moore, Lemuel Smith Sur., 650 ft. from N line, 466 ft. from W line of tract	Comp. 75 bbls. per hr.; ½-in. choke, 5,133 ft.
Humble O. & R. Co.'s No. 30 Moore, Lemuel Smith Sur., 965 ft. NE of No. 14	Drlg. shale 930 ft.
Humble O. & R. Co.'s No. 33 Moore, Lemuel Smith Sur., 600 ft. from NW line, 466 ft. from NE line of lease	Drlg. shale 4,611 ft.
Humble O. & R. Co.'s No. 4 Plaefflin, 658 ft. S of No. 3, W. M. Real Sur.	Comp. 79 bbls. per hr.; ½-in. choke, 5,158 ft.
Humble O. & R. Co.'s No. 5 Plaefflin, W. M. Real Sur., 664 ft. S of No. 4	Spudded.
Humble O. & R. Co.'s No. 2 L. B. Rooker, M. W. Real Sur., 450 ft. N of No. 3	T.D. 5,050 ft; cmtd. 7-in. csg. 5,-025 ft.
Humble O. & R. Co.'s No. 5 L. B. Rooker, M. W. Real Sur., 400 ft. N of No. 2	Drlg. shale 4,666 ft.
Humble O. & R. Co.'s No. 6 L. B. Rooker, 1,431 ft. from N line, 285 ft. from W line of J. M. Real Sur.	Drlg. shale 3,932 ft.
Humble O. & R. Co.'s No. 32 South Tex. Dev. Co., 1,-300 ft. from S line, 4,800 ft. from E line of Theo. Slade Sur.	Drlg. shale 4,876 ft.
Humble O. & R. Co.'s No. 45 South Tex. Dev. Co., Theo. Slade Sur., 664 ft. NE of No. 46	Shale 5,085 ft.
Humble O. & R. Co.'s No. 2 Wiggins & Athey, T. M. Wiggins Sur., 600 ft. from S line, 300 ft. from E line of 26.6-ac. lease	Comp. 87 bbls. per hr.; ½-in. choke, 5,131 ft.
W. M. Massey's No. 2 Fannie Hooper, 1,020 ft. from N line, 635 ft. from W line of Fannie Hooper (De-Moss) Sur.	Sand 5,060-5,130 ft; comp. 100 bbls. per hr.; ½-in. choke.
Mortex Oil Co.'s No. 1 Springfield, J. E. Springfield Sur., 467 ft. from N line, 467 ft. from W line of 100-ac. lease	Rig.
Navarro Oil Co.'s No. 1 Wiggins hrs., L. A. Lang Sur., 168 ft. from S line, 410 ft. from E line of lease	Cmtd. 10¾-in. csg. 1,510 ft.
Neuhaus & Horn's No. 1 South Tex. Dev. Co., center of L. L. Horn 16.31-ac. tract in T.&N.O. Sur. No. 5	Sand 5,052-5,122 ft; comp. 65 bbls. per hr.; ⅝-in. choke.
Neversuch Oil Co.'s No. 3 South Tex. Dev. Co., T.&N. O. Sur. No. 5, 933 ft. N of No. 2 in center of lease N and S	Sand 5,095-5,105 ft; cmtd. 7-in. csg. 5,025 ft.
North Star Oil Co.'s No. 1 Granger, 1,400 ft. from E line, 2,600 ft. from N line of T.&N.O. Sur. No. 14	Cmtd. 10¾-in. csg. 1,226 ft.
Republic Prod. Co.'s No. 1 B. D. Griffin, Wilson Strickland Sur., 333 ft. from E line, 466 ft. from N line of lease	Set screen 5,101 ft; washing.
South Gulf Oil Corp.'s No. 2 Granger, T.&N.O. Sur. No. 14, 933 ft. E of No. 1 and 467 ft. from S line	Drlg. shale 2,863 ft.
Southern Liberty Oil Co.'s No. 1 South Tex. Dev. Co., T.&N.O. Sur. No. 5, 350 ft. out of NW cor. of 13.675-ac. tract	T.D. 5,118 ft; cmtd. 7-in csg. 5,-947 ft.
Southern Liberty Oil Co.'s No. 1 Allen, L. Smith Sur., 466 ft. from N line, 275 ft. from W line	Moving in material.
Southern Liberty Oil Co.'s No. 1-B South Tex. Dev. Co., 330 ft. from N line, 2,600 ft. from E line of T.&N.O. Sur. No. 5	Cmtd. 10¾-in. csg. 1,335 ft.
Standard Oil Co. of Kans.' No. 2-A Madeley, Ransom House Sur., 1,374 ft. from N line, 695 ft. from E line of survey	Drlg. shale 4,494 ft.
Strake Pet., Inc.'s No. 1 K. G. Shaffer, C. B. Stewart Sur., 555 ft. from E line, 1,400 ft. from S line of lease	T.D. 5,092 ft; cmtd. 7-in. csg. 5,-025 ft.
Sun Oil Co.'s No. 1 Jones, Sitton Sur., 466 ft. out of NW cor. of tract	Drlg. shale and lime 4,551 ft.
Sun Oil Co.'s No. 2 Foster, John Bricker Sur., 933 ft. SW of No. 1	Drlg. shale and lime 4,329 ft.
Sun Oil Co.'s No. 3 Foster, J. Bricker Sur., 933 ft. W of No. 2 and 466 ft. S of N line	Derrick.
Sun Oil Co.'s No. 3 South Tex. Dev. Co., T.&N.O. Sur. No. 5, 943 ft. N of No. 1 in center of lease E and W	T.D. 5,168 ft; plugged to 5,136 ft; set screen.
Sun Oil Co.'s No. 3 South Tex. Dev. Co., T.&N.O. Sur. No. 5, 933 ft. N of No. 2 in center of lease E and W.	Derrick.
Sun Oil Co.'s No. 4 South Tex. Dev. Co., T.&N.O. Sur. No. 4, 933 ft. N of No. 3 in center of lease E and W.	Moving in.
Sun Oil Co.'s No. 2 Jones, Wilson Strickland Sur., 466 ft. from N and E lines of lease	Drlg. hard sand and shale 4,-354 ft.
Sun Oil Co.'s No. 2 Stewart, J. M. Real Sur., 1,350 ft. from E line, 1,400 ft. from S line of lease	T.D. 5,119 ft; cmtd. 7-in. csg. 5,-068 ft.
Sun Oil Co.'s No. 3 Stewart, J. M. Real Sur., 1,040 ft. from E line, 700 ft. from N line of lease	T.D. 5,159 ft; cmtd. 7-in. csg. 5,-092 ft.
Texas Unity Oil Co.'s No. 1 Keystone Mills, L. Smith Sur., 466 ft. from S and E lines of lease	Drlg. sticky shale 1,850 ft.
The Texas Co.'s No. 5 Dudley, C. B. Stewart Sur., 1,-188 ft. E, 600 ft. S out of NW cor. of lease	Drlg. shale 4,982 ft.

Will it PAY?



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The Texas Co.'s No. 12 Moody, Ransom House Sur., 933 ft. S, 15 deg. E of No. 8 ..... Drlg. shale 4,986 ft.

The Texas Co.'s No. 22 Moody, Ransom House Sur., 350 ft. from most westerly west cor. and 466 ft. from most southerly N line ..... Drlg. broken sand and shale 4,314 ft.

The Texas Co.'s No. 15 Moody, Ransom House Sur., 966 ft. N of No. 14 ..... Comp. 92 bbls. per hr.; ½-in. choke, 5,039 ft.

The Texas Co.'s No. 20 Moody, 2,200 ft. E along S line of Wilson Strickland Subd. from SW cor. and 466 ft. S at right angles ..... Comp. 95 bbls. per hr.; ½-in. choke, 5,116 ft.

The Texas Co.'s No. 24 Moody, Ransom House Sur., N 75 deg. E 1,400 ft. and S 15 deg. E 2,330 ft. from NW cor. of lease ..... Rig.

The Texas Co.'s No. 25 Moody, Ransom House Sur., 1,400 ft. N 75 deg. E and 1,398 ft. S 15 deg. E of NW cor. of lease ..... Drlg. gumbo 1,172 ft.

The Texas Co.'s No. 7 Rhodes, 1,210 ft. from E line of lease and 330 ft. S of S line of G. A. West Sur. in W. S. Rhodes Sur. ..... Comp. 65 bbls. per hr.; ½-in. choke, 5,122 ft.

The Texas Co.'s No. 13 Rhodes, 1,450 ft. from S line, 1,300 ft. from E line of lease, W. S. Rhodes Sur. ... Drlg. sand and shale 3,120 ft.

The Texas Co.'s No. 14 Rhodes, W. S. Rhodes Sur., 1,060 ft. from W line, 1,470 ft. from S line ..... T.D. 5,010 ft; rebldg. derrick after blowout.

Tide Water Oil Co.-Strake's No. 4 -Dean, W. C. C. Lynch Sur., 467 ft. from S and E lines of lease .... Comp. 84 bbls. per hr.; ½-in. choke, 5,033 ft.

Tide Water Oil Co.'s No. 5 Dean, W. C. C. Lynch Sur., 1,368 ft. from E line, 467 ft. from S line of lease.... Comp. 90 bbls. per hr.; ½-in. choke, 5,095 ft.

Tide Water Oil Co.'s No. 1 Eichlotz, Lemuel Smith Sur., 467 ft. from N line, 1,010 ft. from E line of lease ..... Drlg. shale 2,407 ft.

Tide Water Oil Co.'s No. 2 Granger, T.&N.O. Sur. No. 14, 1,096 ft. from N line, 338 ft. from W line ..... Bldg. derrick.

Tide Water Oil Co.'s No. 3 Krohn, S. H. Bryan Sur., 466 ft. from N line, 467 ft. from W line of tract.... Rig.

Tide Water Oil Co.'s No. 19 Lewis, C. B. Stewart Sur., 395 ft. from S line, 2,180 ft. from E line of lease .... Comp. 87 bbls. per hr.; ½-in. choke, sand 5,067-5,113 ft.

Tide Water Oil Co.'s No. 20 Lewis, 1,493 ft. from S line, 467 ft. from E line of lease ..... Sand 5,025-5,116 ft; comp. 84 bbls. per hr.; ½-in. choke.

Tide Water Oil Co.'s No. 5 South Tex. Dev. Co., T.&N. O. Sur. No. 5, 1,453 ft. from W line, 467 ft. from N line of lease ..... Rig.

Whittle & Davis' No. 1 Wahrenberger, R. C. Hamlet Sur., 300 ft. N, 400 ft. E of center of lease ..... Moving in.

REFUGIO—REFUGIO COUNTY

United Prod. Corp.'s No. 1-A M. F. Lambert, 666 ft. from N line, 522 ft. from W line of Hews & Brown Sur. ..... No report.

PORT NECHES—ORANGE COUNTY

The Texas Co.'s No. 3 Kuhn (W.O.), Mary E. Hall Sur., No. 2, 587 ft. S, 150 ft. W of NE cor. of survey..... Drlg. shale 4,351 ft.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 7 Clay, J. F. Perry Sur., 200 ft. from S line of lease and 50 ft. NW of No. 6 ..... T.D. 1,323 ft; comp. 50 bbls. dly.

SOUTH LOUISIANA FIELDS

DARROW—ASCENSION PARISH

Rio Bravo Oil Co.'s No. 2 Community, Sec. 31-10s-2e, 1,760 ft. S, 600 ft. W of No. 1 ..... Set 81 ft. of 7-in. screen 4,827 ft; failed to flow; rigging up to pump.

Rio Bravo Oil Co.'s No. 1 Gumbel, 4,000 ft. W, 250 ft. S of NE cor. of S. Gumbel & Co. tract, Sec. 33-10s-2e.. Sandy shale showing oil 5,824-30 ft; to set csg.

SORRENTO—ASCENSION PARISH

Union Sulphur Co.'s No. 24 United Land Co., Sec. 14-10s-4e, 2,500 ft. E of No. 6 ..... Drlg. shale 2,050 ft.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Shell Pet. Corp.'s No. 1 Stafford, 325 ft. S, 225 ft. E of NW cor. Sec. 18-9s-6w ..... T.D. 7,021 ft; reaming.

PORT BARRE—ST. LANDRY PARISH

Gulf Ref. Co.'s No. 3 Wilson & Cochran, Sec. 4-6s-5e... Drlg.

VINTON—CALCASIEU PARISH

Marrs McLean's No. 15 Gray, Sec. 32-10s-12w ..... Cmtd. 10-in. csg. 735 ft.

STARKS—CALCASIEU PARISH

Union Sulphur Co.'s No. 1 Lutcher-Moore, 2,200 ft. W, 1,010 ft. N of SE cor. Sec. 10-9s-12w ..... Salt 3,015-3,055 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 777 fee, 753 ft. E and 756 ft. N of center Sec. 29-9s-10w ..... Salt 4,459-96 ft.

Union Sulphur Co.'s No. 778 fee, 362 ft. N, 1,755 ft. W of center Sec. 29-9s-10w ..... Drlg. shale 4,675 ft.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 2 Mulvey, Sec. 34-11s-1w, 1,515 ft. from N line, 1,150 ft. from E line of tract ..... Pulling screen to deepen 4,850 ft.

Pure Oil Co.'s No. 3 Mulvey, 600 ft. S, 2,369 ft. E of NW cor. Sec. 34-11s-1w ..... Coring sand showing oil 4,156 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 2 Hanszen, Sec. 14-12s-10w, 400 ft. W, 200 ft. S of No. 1 ..... Derrick.

East Hackberry Oil Co.'s No. 1 Landry, 2,957 ft. E, 156 ft. S of SW cor. Sec. 13-12s-10w, in Sec. 36..... Drlg. 2,700 ft.

Massert & Cruse's No. 1 J. B. Duhon, 656 ft. S, 325 ft. E of NW cor. Sec. 26-12s-10w ..... S.D. 3,897 ft.

The Texas Co.'s No. 10-B State, 1,000 ft. E, 300 ft. N of NE cor. Sec. 13-12s-10w ..... Drlg. 6,655 ft.

Union Sulphur Co.'s No. 5 Gulf Land-Humble lease, Sec. 11-12s-10w, 300 ft. N of No. 1 ..... Drlg. shale 5,920 ft.

CHOCTAW—IBERVILLE PARISH

Standard Oil Co.'s No. 4 Myrtle Grove, 2,350 ft. S, 150 ft. W of NE cor. NW Sec. 52-9s-11e ..... Spudded.

CAMERON MEADOWS—CAMERON PARISH

Magnolia Pet. Co.'s No. 3 Cameron Meadows, 3,630 ft. S, 1,980 ft. W of NE cor. Sec. 21-14s-13w..... Salt 6,170-6,450 ft; drill pipe stuck; standing.

Bertrand-Sutton Oil Co.'s No. 1 School, 500 ft. W, 20 ft. N of SE cor. Sec. 16-14s-13w ..... Drlg. rock 3,515 ft; passed oil sand 3,495-3,510 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 11 Yount Lee, Sec. 13-12s-8w, 800 ft. S 66 deg. 42 min. from No. 9 ..... Cored sand showing oil 7,353 ft.

TEXAS

MISCELLANEOUS WILDCATS

AUSTIN COUNTY

Cranfill-Reynolds Co.'s No. 1 Swearingen, 1,705 ft. NE along SE line from S cor. of C. K. Hamm Sur., and 336 ft. NW at right angles..... Derrick.

BRAZORIA COUNTY

Amerada Pet. Corp. and Ryeads Oil Corp.'s No. 2 Seaburn, 1,250 ft. E of W line and 4,550 ft. S of N line of Austin & Williams Sur. ..... Drlg. shale 4,369 ft.

Danciger O. & R. Co.'s No. 2 Hunt, Pledger, 6,550 ft. from E line, 5,550 ft. from S line of W. Carson Sur.. Drlg. rock 4,621 ft.

Tri-fin Oil Co.'s No. 1 Moore, 1,635 ft. SW of Chocolate Bayou, 693 ft. SE of NW line of F. Moore Sur. ..... Drlg. shale 4,990 ft.

BRAZOS COUNTY

Adkins & O'Neill's No. 1 Clay, 1,150 ft. E, 5,750 ft. N of SW cor. of Walter Southerland Sur. ..... Shale 3,534 ft; S.D.; W.O.

COLORADO COUNTY

Fabrigus & Poole's No. 1 Lake Side Irrigation, 1,500 ft. SE, 500 ft. NE NW cor. Patrick Real Sur. ..... Drlg. sand 225 ft.

Danciger O. & G. Co. and L. B. Hults' No. 1 C. L. Raver, B.B.B.&C. Sur., Sec. 1, 990 ft. out of SW cor. of 477-ac. tract ..... Drlg. shale 1,745 ft.

Humble O. & R. Co.'s No. 1 John McShane, L.&G.N. Sur., Sec. 42, 466 ft. out of NE cor of tract ..... T.D. 4,657 ft; plugged to 3,600 ft; drlg. new hole in shale 3,950 ft.

Plymouth Oil Co.'s No. 1 Ream, 330 ft. out of NE cor. of L.&G.N. Sur. No. 47 ..... Drlg. blue shale 4,605 ft.

FORT BEND COUNTY

Naylor & DeCosta's No. 1 Naylor, 6,350 ft. N, 55 deg. E from SW cor. 653-ac. tract in Christman Sur. .... T.D. 7,014 ft; P.B. to 5,600 ft.

GRIMES COUNTY

Southwest Pet. Co.'s No. 1 Greer, Pat O'Connor Sur., 200 ft. from W line, 400 ft. from N line of 150-ac. tract ..... Moving in rig.

HARRIS COUNTY

C. & C. Drlg. Co.'s (Weatherall) No. 1 Paden, 1,320 ft. from N line, 1,320 ft. from W line of Brock Sur. .. Cmtd. 10-in. csg. 491 ft; T.D. 520 ft.

D.P.M. Corp.'s No. 1 Malcomson, A. Schouten Sur., 500 ft. from N line, 1,800 ft. from E line of 253-acre Daniels tract ..... Spudded.

H. B. Jordan's No. 1 Cochran, J. L. Jordan Sur., 1,950 ft. from S line, 1,930 ft. from E line ..... Rigging up.

Magnolia Pet. Co.'s No. 1 Koba, 923 ft. from E line, 1,650 ft. from N line of lower J. M. Hooper Sur. .... Drlg. gumbo 1,705 ft.

Magnolia Pet. Co.'s No. 1 Martens, Joseph House Sur., 600 ft. from W line, 5,400 ft. from S line of tract .. Cmtd. 9⅝-in. csg. on bottom 3,624 ft.

JACKSON COUNTY

The Texas Co.'s No. 1 Mitchell, S. F. Austin League, 450 ft. W, 450 ft. S of NE cor. of 63-ac. tract, Lot 28, Clement Subd. ..... Drlg. shale 600 ft.

JASPER COUNTY

Smitherman, Neilson & Noble's No. 1 Cameron, Wm. Jones Sur., 400 ft. S 45 deg. W of SW cor. of J. W. Allen 300-ac. tract ..... S.D. 4,036 ft.

JEFFERSON COUNTY

Coastal Oil Co.'s No. 1 Young, 250 ft. from E line, 160 ft. from S line of 40-ac. tract, in Blk. P-5, Lot 6, Joseph Grigsby Sur. ..... S.D. 4,760 ft.

Blam & Denny's No. 2 Broussard, John McGaffey Sur., 150 ft. due E of No. 1 ..... Washing to bottom 3,380 ft.

LIBERTY COUNTY

Yount Lee Oil Co.'s No. 1 E. W. Boyt, H.&T.C. Sur., Sec. 17, 300 ft. from S line, 2,440 ft. from E line of section ..... Drlg. gumbo and lime 1,686 ft.

MATAGORDA COUNTY

Cockburn Oil Corp.'s No. 5 Hawkins, Shepherds Mott, 2,200 ft. SE, 1,300 ft. NE of W cor. Daniel McCarthy Sur. ..... T.D. 5,320 ft; plugged to 2,150 ft; milled out at 2,100 ft; drill pipe stuck; P.B. to 1,500 ft; trying to sidetrack.

Humble O. & R. Co.'s No. 2 Pierce est., 1,900 ft. NE, 466 ft. NW at right angles out of SW cor. of Pierce estate, same being NW cor. of W. S. and L. B. Hunt tract, W. Carson Sur. ..... Shale 2,141 ft; cmtd. 9⅝-in. csg.

United North & South Dev. Co.'s No. 1 Stoddard (W.O.), 150 ft. W, 545 ft. N of SE cor. of Blk. 53, Buckeye townsite ..... T.D. 7,926 ft; drlg. sidetracked hole 7,875 ft.

United North & South Dev. Co.'s No. 1 Unit 6 (No. 2 Stoddard), 25 ft. each way out of NW cor. of Lot 19, Buckeye Townsite ..... Fishing drill pipe 6,060 ft.

United North & South Dev. Co.'s No. 1 Unit 14 (No. 1 Dr. Plotner), 1,310 ft. SE of No. 1 Stoddard and 136 ft. W of right of way of Collegeport branch of St. L.&B.M.R.R., Buckeye ..... T.D. 6,330 ft; fishing bit.

MONTGOMERY COUNTY

A. H. Parsons et al's No. 3 Drought, Kronkmite Sur., 3,000 ft. N, 100 ft. E of NW cor. of A. B. Hill 46½ acres ..... S.W. sand 4,300 ft; S.D.

POLK COUNTY

Anderson et al's No. 1 Duke, Peter J. Manard Sur., 330 ft. out of NW cor. of 325-ac. tract ..... T.D. 4,730 ft; trying to reset 1,000 ft. of 10-in. surface csg.

Boone, Clark & Boone's No. 1 Tex. Long Leaf, 2,835 ft. NW along NE line of D. B. McComb Sur. from E cor. and 1,135 ft. SW at right angles ..... Rigging up.

Carlisle & Williams' No. 1 G. McDonald, A. Viesca Sur., Sec. 5, 150 ft. N, 220 ft. E of 110-ac. tract ..... Dry and abd. 4,035 ft.

Roxie Oil Co.'s No. 1 Reed, A. Viesca Sur., 150 ft. out of NW cor. of 479-ac. lease ..... Drlg. sandy shale 4,067 ft.

Shell Pet. Corp.'s No. 1 Davis & Holmes, 330 ft. S and E out of NE cor. of J. A. Munson 80-ac. tract in Mary Sweeney (A. Viesca) Sur. ..... T.D. 4,337 ft; sand showing oil; cmtd. 7-in. csg. 4,320 ft.

REFUGIO COUNTY

Geo. M. Smith's No. 1 J. M. O'Brien, 450 ft. W of center of E line of Winfield Sur. ..... No report.

Humble O. & R. Co.'s No. 4 O'Conner, Florentine Rice Sur., 932 ft. NW of No. 3 ..... Cmtd. 9⅝-in. csg. 3,100 ft.

TRINITY COUNTY

L. G. Priest's No. 1 J. B. Gibson, Wm. Beardsley Sur., 900 ft. from N line, 200 ft. from E line of tract .... Cored shale 1,202 ft.

TYLER COUNTY

Republic Prod. Co. and Houston Oil Co.'s No. 1,014-E (No. 2 Sterne fee), Adolph Sterne Sur., 1,300 ft. S, 400 ft. W of No. 1 Sterne fee ..... Gumbo 1,025 ft; cmtd. 10-in. csg.

VICTORIA COUNTY

Stoneleigh O. & G. Co.'s No. 1 Terrell, SW cor. of R. Manchola Sur. No. 2 ..... Drlg. sand and shale 3,736 ft.

The Texas Co.'s No. 7 McFaddin, 6,600 ft. S 15 deg. W, 450 ft. N 75 deg. W at right angles from the NE cor. of the A. J. Gray Sur. ..... Gumbo 1,161 ft; cmtd. 13⅜-in. csg.

WALLER COUNTY

Trapshooter Reilly Oil & Royalty Co.'s No. 1 Menke, Justo Liende Sur., 600 ft. at right angles from NW line at 250 ft. at right angles from E line of 320-ac. tract ..... Drlg. shale and shell 1,010 ft.

WASHINGTON COUNTY

Cline, Taylor et al's No. 1 Chadwick, Isaac Lee Sur., 540 ft. from N line, 1,000 ft. from E line of 320-ac. tract ..... Drlg. shale 791 ft.

WHARTON COUNTY

Pure Oil Co.'s No. 1 Stewart, 2,419 ft. NW, 1,650 ft. NE of S cor. of Sec. 25, Morris & Cummings Sur. ..... Cored sand showing oil 5,963-64 ft.

Smith & Daniels' No. 1 Mitchell, H.&T.C. Sur. No. 5, 330 ft. from NE line of NE 40-ac. tract in center of tract NW and SE ..... Standing 6,875 ft.

SOUTH LOUISIANA

ALLEN PARISH

O'Brien Bros., Inc.'s No. 1 Long Bell, 430 ft. from W line, 330 ft. from N line of NW SW Sec. 34-4s-6w... Drlg. shale 2,059 ft.

BEAUREGARD PARISH

Herber & French's No. 1 Cochran, 400 ft. S, 850 ft. W of NE cor. Sec. 34-4s-5w ..... Rig.

CAMERON PARISH

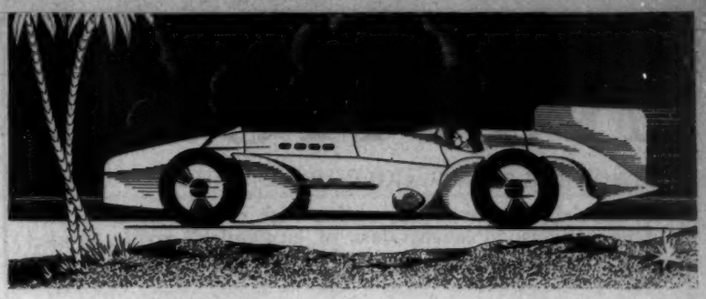
Southern Sulphur Co.'s No. 1 Gulf of Mexico, 330 ft. S, 338 ft. E of SW cor. Sec. 29-15s-10w ..... Derrick.

JEFFERSON DAVIS PARISH

Humble O. & R. Co.'s No. 2 Devilbiss, 1,950 ft. S, 250 ft. W of NE cor. Sec. 14-9s-4w ..... Drlg. shale 2,095 ft.

LA. FOURCHE PARISH

Southern Sulphur Co.'s No. 1 State-Bay Marchand, 617 ft. E, 710 ft. S of SW cor. Sec. 26, in Sec. 29-23s-23e. Rigging up.



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Read the Classified Bargains on page 79 of this week's issue.

PLAQUEMINES PARISH

Texas Gulf Sulphur Co.'s No. 1 LaFourche Levee district, 595 ft. from N line, 75 ft. from W line of Sec. 12-13s-25e ..... No report.

ST. BERNARD PARISH

Cook Drlg. Co.'s No. 1 Delecroix farm ..... Junked and abd. 6,325 ft.
Southern Sulphur Co.'s No. 1 State-Lake Borgne, 350 ft. N, 330 ft. E of SE cor. Sec. 33-13s-15e ..... Rig.
Southern Sulphur Co.'s No. 1 Lake Levy, 400 ft. S, 500 ft. N of SW cor. Sec. 28-13s-15e ..... Rigging up.

TERREBONNE PARISH

The Texas Co.'s No. 2 State-Caillou Island, 1,050 ft. S, 2,770 ft. E of NW cor. Sec. 20-23s-20e ..... Driving piling.
The Texas Co.'s No. 8 State-Dog Lake, 4,067 ft. W, 1,577 ft. N of SE cor. Sec. 31-21s-16e ..... Derrick.
The Texas Co.'s No. 13 State-Lake Barre, 1,876 ft. W, 551 ft. S of NW cor. Sec. 30, in Sec. 36-21s-20e .... Derrick.
The Texas Co.'s No. 2 Lake Pelto-State, 928 ft. S and 638 ft. E of NW cor. of Sec. 9-22s-18e ..... Cap rock 3,878 ft; drill pipe stuck; abd.

VERMILLION PARISH

Shell Pet. Corp.'s No. 1 Herbert, 2,310 ft. W, 330 ft. N of SE cor. Sec. 10-15s-1e ..... Drlg. hard dry sand.

Wildcat Operations in Louisiana-Arkansas

(Continued from Page 53)

State Drlg. & Prod. Co.'s No. 1 Wemple, 330 ft. N and E, SW cor. NW SW Sec. 14-12-11 ..... S.D. shale 2,200 ft.

NATCHITOCHES PARISH

H. H. Temples' (was Natchitoches Pet. Co.'s) No. 1 Edenborn, 2,240 ft. W, 1,320 ft. S, NE cor. Sec. 4-11-6w ..... S.D.; W.O. 3,156 ft.

OUACHITA PARISH

Southern Carbon Co.'s No. 15 Fairbanks, 1,920 ft. N, 660 ft. W, SE cor. Sec. 5-19-4 ..... S.D.; W.O. 1,065 ft.

RAPIDES PARISH

Evers & Collingsworth's (was A. G. Beck et al's) No. 1 Hickman-Simmons Lbr. Co., 330 ft. S, 330 ft. E. NW cor. Sec. 40-4-1e ..... Drlg. gumbo 1,160 ft.

RED RIVER PARISH

Edward & Clay's No. 1 Delta Pecan Co., 1,600 ft. N, 480 ft. E, SW cor. Sec. 27-13-11 ..... Drlg. cap rock 3,380 ft.

SABINE PARISH

R. T. Henderson's No. 1 Sistrunk, 450 ft. N, 150 ft. W. C. Sec. 9-9-12 ..... Swabbing small amount oil; T.D. 2,079 ft.
C. D. Lee, tr.'s No. 1 Whitney, 330 ft. N and W, SE cor. NW NE Sec. 19-9-14 ..... Base chalk 2,107 ft; S.D.; W.O. 2,205 ft.

CONVERSE DISTRICT

Cloud & Bolin's No. 1 Bowman-Hicks, SE cor. NE NE Sec. 26-9-13 ..... Arranging set liner 3,404 ft.
Lambert et al's No. 1 Edwards, 300 ft. S and E, NW cor. SW NW Sec. 29-9-13 ..... Arranging deepen; T.D. 1,971 ft.
H. C. Lessenger's No. 1 Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor. Sec. 13-9-13 ..... Reaming to set 8⅝-in.; T.D. 1,612 ft.

TENSAS PARISH

H. V. Schumacker's No. 1 Curry, 1,320 ft. S, 1,320 ft. E, NW cor. Sec. 39-11-12 ..... S.D. 3,725 ft.

Arkansas

LINCOLN COUNTY

Lawrence M. Cook, tr.'s No. 1 McGhee Planting Co., 430 ft. S, 220 ft. W, NE cor. NE SW ..... S.D. 4,348 ft; (C.D.).

LITTLE RIVER COUNTY

American Portland Cement Co.'s No. 1 fee, 150 ft. S and E, NW cor. SW NE Sec. 21-12-32 ..... S.D. 2,185 ft.

MILLER COUNTY

J. T. Humphrey's No. 1 Grace, C SW SW Sec. 9-15-27... Cmtd. 10-in. 206 ft.
Roy Kniveton's (was Simon & Birdwell's) (was C. E. Starr's) No. 1 Barker, 330 ft. S, 150 ft. E, NW cor. NW SE Sec. 31-17-26 ..... Drlg. S.W. sand 3,370 ft.

UNION COUNTY

Tom Nash's No. 1 Union Sawmill, 200 ft. N and E, SW cor. NW NE Sec. 19-18-11 ..... S.D. 2,133 ft.

East Texas

CASS COUNTY

T. H. Pardoe, operator's No. 1 S. A. Orr, in the G. W. Morris Sur., 330 ft. east of the W line of the G. W. Morris Sur., also the east line of the David Frazier Sur. ..... Drlg. sandy shale 1,633 ft.

Louisiana-Arkansas Proven Areas

North Louisiana

CADDO—BLANCHARD AREA

Company, well, farm name, section and block— Remarks:

CADDO—BETHANY

Tom Collins Pet. Co.'s No. 1 Gill & Lipscomb, 660 ft. N, 1,596 ft. E, SW cor. Sec. 17-16-16 ..... Derrick.

CADDO—HOSSTON

Caddo Prairie O. & G. Co.'s No. 1 Hawkins, C SE SW Sec. 14-22-15 ..... S.D.; W.O. 1,826 ft.
Gibson Oil Corp.'s No. 1 J. H. Dominick, 330 ft. S and W, NE cor. SW NE Sec. 31-23-14 ..... Drlg. hard shale 2,930 ft.

RHODESSA AREA

Pyramid O. & G. Co.'s No. 1 Shuttleworth, C SW NE Sec. 3-18-16 ..... Began drlg. Apr. 3; 10-in. 200 ft; drlg. 600 ft.

RED RIVER PARISH

W. W. Smith's No. 1 Wilkinson, 100 ft. S, 550 ft. W, NE cor. SW NW Sec. 3-12-10 ..... Began drlg. Apr. 6; 10-in. 80 ft; S.D.

SABINE PARISH—ZWOLLE

Byers et al's No. 1 Ervin & Bishop, 550 ft. E, 450 ft. N, SW cor. Sec. 16-7-11 ..... Drlg. 2,000 ft.
Doyle et al's No. 1 M. D. Russell, 330 ft. N and W, SE cor. NE SE Sec. 23-8-12 ..... Dry 2,405 ft; S.D. 2,457 ft.
Graham Prod. Co.'s No. 1 Lites, 330 ft. S and E, NW cor. SE SW Sec. 28-8-11 ..... T.A. 2,700 ft.
C. H. Lyons et al's No. 1 Stille, 330 ft. S and W, NE cor. SE Sec. 16-7-11 ..... Cmtd. 6-in. 2,245 ft.
Martin et al's No. 1 Porter, 330 ft. S, 330 ft. W, NE cor. NW SW Sec. 20-8-11 ..... S.D. fuel 390 ft.
H. C. Moulding's No. 1 Brumley, 330 ft. N, 330 ft. E, SW cor. NW NW Sec. 2-7-11 ..... Tested dry; W.O. 2,660 ft.
Ohio Oil Co.'s No. 1 A. C. Phillips, 330 ft. S and W, NE cor. SW SW Sec. 20-8-11 ..... Dry 2,232 ft; drlg. chalk 2,360 ft.
Robertson Drlg. Co.'s No. 1 J. W. Hughes, 1,320 ft. W, C, Sec. 26-8-12 ..... Top mari 2,252 ft; S.D. for csg.
Scully & Beach's No. 2 Lafitte, 1,030 ft. S, 134 ft. E, NW cor. Sec. 13-7-11 ..... Arranging to set tubing 2,636 ft.
H. R. Smith et al's No. 1 Middleton, 330 ft. N and W, SE cor. SE SE Sec. 26-8-12 ..... S.D.; W.O.; T.D. 2,553 ft.
C. H. Tuttle's No. 4 Byrd, 300 ft. S, 330 ft. E, NW cor. NW NW Sec. 7-7-10 ..... Derrick.

Arkansas

UNION COUNTY—EL DORADO

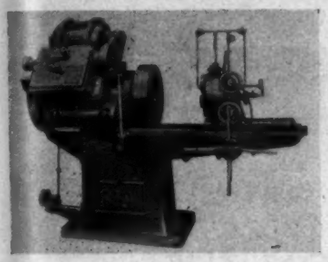
F. C. Henderson's No. 1 J. F. Sample, 330 ft. S and W, NE cor. NW NW ..... S.D. 2,915 ft.

NEW AND IMPROVED EQUIPMENT

Selective-Speed Gear Box Put on Market by Landis

The Landis Machine Co., Inc., Waynesboro, Pa., has developed a new selective-speed gear-box for use on its motor-driven 2-inch pipe-threading and cutting machine, 2-inch pipe and nipple threading machine and the 2-inch and 2½-inch bolt threading machines. The new gear-box as applied to the 2-inch pipe-threading and cutting machine is shown in the accompanying illustration.

This gear-box has eight speeds. Owing to the wide speed range thus obtained the operating efficiency of the machine



is increased by making possible the selection of a threading speed more exactly suited to the diameter of the work and the machinability of the material to be threaded. In this way not only is production increased, but chaser life is prolonged between grinds.

The speed changes are effected through self-locking levers which are conveniently located and easily operated. The lever positions for the various speeds are indicated by a speed plate attached to the gear-box cover.

This unit is self-contained and is completely enclosed. There are no unguarded moving parts nor are there any openings to the interior of the gear-box. All gears are cut from chrome nickel steel and are hardened and burnished. The gear-shafting, made of heat-treated alloy steel, is mounted on antifriction bearings. Both gears and bearings are lubricated automatically by a splash system from an oil reservoir formed in the lower portion of the gear-case. Since this unit is self-contained, it is readily applicable to Landis machines of the sizes and types enumerated and now in service.

The selective-speed gear-box can be bolted to the head stock in the same position as the tumbler gear-box or the speed reducing plate used as standard equipment on the constant-speed and variable-speed motor-driven machines respectively. The new gear-box is recommended in conjunction with either A.C. or D.C. constant-speed motors wound for an approximate speed of 1,200 r.p.m.

Infinite Speed Control Is Gained With New Reducer

The Johnson variable reducer, announced by the Smith Power Transmission Co., Penton Building, Cleveland, Ohio, is described by the manufacturer as "an infinite variable speed reducer, self-contained, running in a bath of oil; compact; will give infinite speed control from zero to any desired speed, using a control that is visible and quickly manipulated; the unit stops instantly, having no high-speed inertia to overcome; strictly a mechanical device, does not operate under sliding or rolling friction; noiseless in operation with very high efficiency."

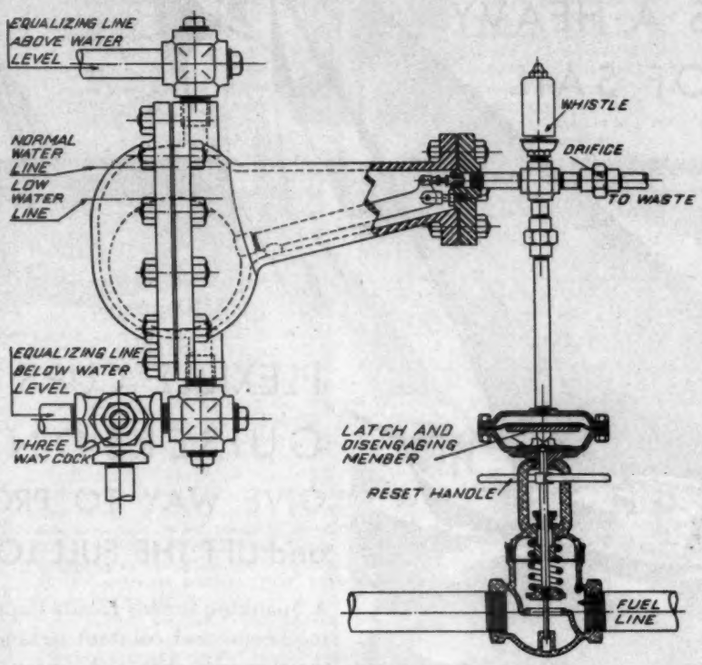
The capacity of the unit ranges from 1 horsepower up.

Davis Develops Protective Unit for Oil Field Boilers

Engineers of the Davis Regulator Co., Chicago, have developed an automatic low water fuel cut-off especially designed to meet insurance standards for gas-fired oil field boilers. As shown in the accompanying diagram, the unit consists of a cast-steel float chamber, pilot valve, fuel shut-off valve, and a whistle. The float chamber is connected to the steam and water spaces of the boiler so that the minimum low water line will be approximately in the position shown in the diagram. The diaphragm-operated fuel valve may be placed at any convenient point as it is closed by admission of steam pressure to the top of the diaphragm. The unit is designed to handle a maximum working steam pressure of 350 pounds.

The cycle of operation is simple. When the water level in the boiler drops below a predetermined point the float will be carried down to a point where it opens the pilot valve. Steam flowing through the pilot valve builds up pressure over the diaphragm of the cut-off valve and forces it down. The downward movement of the diaphragm trips a latch and causes the main valve to close immediately. After being closed the main valve cannot be opened again until the latch is reset by hand.

A whistle is installed between the float chamber and the cutout valve. When the pilot valve opens the whistle blows, warning the attendants. A small vent orifice is provided in the line between the pilot valve and the diaphragm chamber to prevent any possible leakage from building up enough pressure to trip the fuel valve. The vent is kept small so that it does not interfere with the regular operation of the unit. Facilities for testing the unit at any time are provided by a three-way cock in the water leg of the float chamber.



This diagram shows the arrangement for installing the new Davis automatic low water fuel cutout for gas-fired field boilers

Timken Introducing a New Design of Removable Bits

After three years of experimental and development work the Timken Roller Bearing Co., Canton, Ohio, has put on the market a new type of removable drilling bit which it is asserted eliminates the difficulties encountered in previous attempts to develop such a bit and which is said not only to drill further, but also to eliminate most of the expenses involving large investments in drill-steel, resharpening equipment, labor and transportation.

The Timken bit replaces the conventional bit, which is forged on the end of the hollow drill steel. It is held tightly against an upset shoulder on the steel by means of a special thread designed for strength and easy removability. This left-hand thread is opposed to the direction of rotation of the steel so that the bit is kept tightly against the shoulder while drilling. The hammer blow is transmitted from the steel through the shoulder to the body of the bit. None of its force is absorbed by the thread.

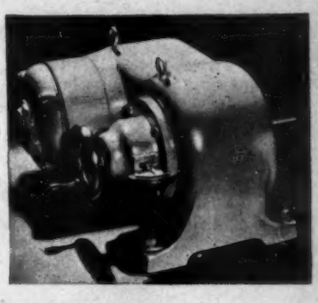
When a Timken bit becomes too dull for further service it is merely removed and replaced with a new one which experience is said to have shown to be an economical procedure.

These bits are forged from a special alloy of fine grained steel made in electric furnaces and carefully heat-treated to give maximum strength, life and wear resistance. Therefore, aside from the economies resulting from the elimination of resharpening the bits, a longer drilling life is claimed.

Varidrive Motor Provides Unusual Range of Speeds

The U. S. Varidrive motor, announced by the U. S. Electrical Manufacturing Co., Los Angeles, Calif., consists of a simple squirrel-cage motor and a variable speed differential which comprises dual discs coupled with the U. S. varibelt. The differential discs, which are called varidiscs, reciprocally expand and contract for higher or lower speeds, transmitting power through the varibelt to the take-off shaft. Because of its few moving parts, varidrive is said to be reliable and durable.

Varidrive speeds may be increased or decreased instantly to any r.p.m. over a



wide range while the driven machine is in motion. The Varidrive motor is arranged for local or remote control. A hand wheel is mounted on the unit for local control. For remote control a push button station or a hand wheel may be installed at the most convenient location for the operator. Automatic remote control can also be furnished.

The operator may change the rotation 1, 10, 20 or 30 per cent, or any percentage of the range, quickly and easily. The microspeed adjustment of Varidrive is similar to the throttle control of an automotive engine. For just as a motor car speed may be increased or decreased 10, 20 or 30 miles an hour, so the speed of the Varidrive motor can be stepped up or down 10, 20 or 30 per cent or more, with the positive action of microspeed control.

The microspeed indicator mounted on the case furnishes visual observation of the r.p.m. of the take-off shaft. The scale of the dial segment is removable so that special scales calibrated to rate of production may be substituted if desired.

Gasoline Engine Is Used to Drive New Ventilator

For ventilating and driving off obnoxious gases from enclosed places where electric power is not available, a gasoline engine driven blower has been placed on the market by the Coppus Engineering Corp. of Worcester, Mass., manufacturer of blowers, both industrial and ventilating.

The new device, powered by a three-quarter horsepower air-cooled gasoline engine, operating at 1,800 r.p.m. is mounted on heavy coil springs to cushion the vibration of the single cylinder engine, and delivers 1,550 cubic feet of air per minute. By means of an 8-inch diameter flexible tubing of proper length the air flow can be directed to any desired point. An adjustable discharge eliminates elbows in this duct.

The entire device weighs only 105 pounds and can easily be carried around and set up on any space 2 feet square, or larger, for ventilating process tanks, cable manholes, pipe galleries, underground passages, etc.

FLEXIBLE THINGS ENDURE

THE SLENDER MAST QUIVERS, BENDS AND CARRIES A HEAVY LOAD OF SAIL

FLEXIBLE CUPS ON THE GUIBERSON SWAB GIVE WAY TO PROTRUSIONS and LIFT THE FULL LOAD OF OIL

A Spanking breeze means flapping sails, swinging booms and constant jerking and tugging at the slim pole that is the most important thing aboard. But it gives, bends and carries the load.

The Flexible Cups of the Guiberson Swab, passing upward through pitted, dented and worn casing, escape damaging contact with the rough places because of their pliant nature, yet maintain a perfect seal and lift all the fluid. Guide wires steer the cup rims as they pass over the dangerous areas. The heavier the load, the tighter the seal with the casing wall. Pressure from below collapses the cups, allowing far speedier passage into the hole. The Guiberson Swab is doing most of the world's swabbing today.

Fully patented

"Better Be Safe Than Sorry"

The GUIBERSON CORP.
Box 1106, Dallas, Texas
California Branch: 1304 Security Title Ins. Bldg., Los Angeles
504 Wright Bldg., Tulsa
First and Locust Sts. Newark, O.

GUIBERSON

BETTER BE SAFE THAN SORRY

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing or transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depth of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

How Differing Products in the Same Line Are Kept Apart

Ever since the Great Lakes Pipe Line Co. and the Phillips Pipe Line Co. announced their plans of sending gasoline of different specifications and even petroleum products of different kinds through their long lines I have wondered how the thing was accomplished. How do they keep the different grades of gasoline and the different kinds of products from becoming mixed? How can they tell just where a load of one product ends in the line and another begins? —E. S. T.

Prior to the construction of the pipe lines you name and their sucessful transportation of products of differing characteristics it popularly was supposed that such an operation was not commercially practicable. Actual performance has confirmed the theories of the engineers upon whose advice the lines were built. Natural gasoline, butane and refinery gasolines are slugged through the Phillips line from the Border Field in the Texas Panhandle to St. Louis Mo., without contamination of commercial consequence. Similarly gasolines of varying specifications are slugged through the Great Lakes line. F. E. Richardson, general superintendent of the Great Lakes Pipe Line Co., provides the following explanation of how the differing gasolines are moved:

The actual movements through the line of different specification gasolines are in the care of the chief dispatcher, who may have as many as three products spotted at intervals throughout the system with deliveries of certain quantities to be made at different terminals along the line. The dispatcher knows within a few hundred feet or less where each product is located, and by means of charts and maps showing capacity and mileage, can trace its movements at all times. The dispatcher has control of all pumping speeds and designates tankage and movements through the system. Check samples are reported to him from all intermediate points, and in the final calculations on a delivery, he will know its arrival within minutes.

A typical movement through the system is as follows: Assuming a receipt of 50,000 bbls. of "X" gasoline at Muskogee, Okla., for delivery to Chicago. The Muskogee station will deliver to Okmulgee, Okla., through a 4-inch line at the rate of 4,200 bbls. per day, and the front end of this product will arrive at Okmulgee in 14.3 hours.

Due to the difference in pumping capacities between Okmulgee and Muskogee stations, namely, 4,200 and 13,000 bbls. per day, it will be necessary to store some of the gasoline, which in this case is 162.3 hours of pumping. After this has been done the product is started north to Barnsdall, Okla., at the rate of 13,000 bbls. per day, and the front end of the stream arrives in Barnsdall in 24 hours.

Here again it is stored and accumulated to overcome the capacity ratio of 13,000 bbls. to 25,000 bbls. per day, or a wait of 30.6 hours is necessary. Pumping is then started north at the rate of 25,000 bbls. per day through the 8-inch line and the progress of the batch is noted every hour. It passes Kansas City, Mo., in 67 hours after leaving Barnsdall and reaches Des Moines, Iowa, in 128 hours.

At Des Moines reverse capacity of 25,000 to 13,000 bbls. per day is encountered, and while it is possible to start the movement east immediately, for the purposes of checking pumpings and determining an over and short on this movement, the first 15,000 bbls. are stored in tankage after which the stream is switched and pumping is started to the east from the first tank at the rate of 13,000 bbls. per day and reaches Chicago in 109.4 hours, or in all, a time interval of 473.6 hours from Muskogee.

All during this time interval, dispatchers have full control of movement. Just ahead of this movement and after this movement, other products from different receiving points are handled in the system by means of storage accumulation at the different stations, they waiting their turn in the line.

It is quite possible to synchronize receipts and deliveries through the use of storage tanks and variable speed pumping to a point where continuous 24-hour pumping takes place and the load factor of the line can be extremely high.

Methods of Plugging Back Wells in Kansas and Law's Demands

Is there any standardized method of plugging back wells? Is there any law in this state (Kansas) relating to the practice? While cement seems to be used in most cases, I am told that lead wool and steel shavings are also used. Could you explain for me briefly the process of plugging back a well with cement?—F. D. D.

The Revised Statutes of the State of Kansas, 1923, provide: "The owner or operator of any well put down for the purpose of exploring for and producing oil or gas shall, before drilling into the oil or gas-bearing rock, incase the well with good and sufficient wrought iron oil-well casing, and in such manner as to exclude all surface or fresh water from the lower part of such well, and from penetrating the oil or gas-bearing rock. Should any well be put down through the first into a lower oil or gas-bearing rock, the same shall be cased in such manner as will exclude all fresh or salt water from both upper and lower oil or gas-bearing rocks penetrated."

"The owner of any well, when about to abandon or cease operating the same, for the purpose of excluding all fresh or salt water from penetrating the oil or gas-bearing rock or rocks, and before drawing the casing, shall fill the well with sand or rock sediment to the depth of 2 feet below the top of each oil or gas-bearing rock, and drive therein a round, seasoned wooden plug at least 2 feet in length, and in diameter equal to the full diameter of the well below the casing, and immediately upon drawing the casing, shall fill in to top of such plug with sand or rock sediment to the depth of 5 feet, and again drive into the well a round wooden plug 3 feet in length, the lower end tapering to a point, and to be of the same diameter at the distance of 18 inches from the smaller end as the diameter of the well below the point at which it is driven; and after such plug has been driven, the well shall be filled with sand or rock sediment to the depth of 20 feet."

Available information is to the effect that lead wood or cement can be used to plug a well in Kansas if proof can be furnished that by using such materials a good water shutoff has been effected.

In State vs. Foster, 106 Kan. 852, 189 Pc. 953 (1920) it was held that "laws 1891, ch. 151, imposing a penalty for failure to plug an abandoned well, could be invoked only against the owner of the land and not against the operator, although for failure to case out water during the drilling both the operator and the owner could be punished."

Why Was It Called That?

ALLIGATOR WRENCH

The alligator wrench is a kind of pipe wrench having a fixed flaring jaw with teeth on one side. It received its name through its resemblance to the open mouth of the alligator, whose long teeth of the lower jaw fit into pits in the upper jaw. The same crocodilian reptile of tropic bayous has provided a name for various other mechanical devices. In metal-working the alligator squeezer (also called crocodile squeezer) is a machine with a powerful pair of jaws between which the puddle-ball is placed to reduce it to a compact mass. A rock-breaker operating by jaws is called an alligator. So, in Australia, is a self-tipping tank, used for raising rock or coal.

Advantages Presented by Closed Water Cooling System

I would like to get a little information regarding the closed cooling water system for Diesel pumping stations, which I understand has been adopted by one of the pipe line companies operating in Texas. If this system has any advantages over the cooling towers and spray ponds generally used I would be glad to know what they are. Does this system of cooling result in less formation of scale, as I am told it does?—A. T. O.

The first closed cooling water system is said to have been the one installed by the Gulf Pipe Line Co. in Midland, Tex. The Humble Pipe Line Co. followed and then other companies fell into line. The original installation in Midland provided for a water-to-water exchanger. In later ones crude being pumped by the main unit is utilized to carry off heat from the engine-jacket water. Such oil-to-water systems have been found more satisfactory.

The advantages of the system have been recognized readily, particularly in regions where bad water conditions prevail or where the supply of water is limited. The advantages are enumerated as follows:

1. Low initial cost of installation.
2. Savings in maintenance charges for cylinder head and other equipment replacements.
3. Elimination of necessity for treating of water supply.
4. Reduction of water requirements to the few barrels contained in the system with consumption of only 1 to 3 or 4 gallons daily.
5. Low water requirement permits location of stations as desired with little consideration of water supply.
6. Compact station layout with saving of ground space.
7. Efficiency of operation.

The closed water system is simplified by use of a heat exchanger, which, because of the comparatively small differential temperature of water entering and being discharged from the engines, does not need to be of an elaborate or costly type. Facilities for providing a large, continuous supply of water are not necessary.

Scale-forming solids in water have taken a heavy toll in broken cylinder heads and have improved large replacement and upkeep costs. The accumulation of scale increases rapidly because of the large volume of water handled and because this water is being replenished constantly by a fresh supply. In closed water system only 8 or 9 bbls. of water are used and the amount of scale-forming substances in this volume is small. As this same water, except for a few gallons added daily, is used over and over again, there can be no accumulation of scale when what little scale-forming substances there might be in the charge once are deposited.

Even if the water is comparatively pure it sometimes is difficult to obtain a continuous and adequate supply. Evaporation loss is heavy and a large amount of water is needed to replenish the losses. Thus a substantial saving is effected in this way by the closed system, and a possibility of a shutdown from lack of water eliminated.

You should find of interest an article in The Oil and Gas Journal of September 29, 1932, on "Closed Type of Cooling Water System Provides Operating and Construction Avantages," by Neil Williams.

TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the questions is considered to be confidential.

Questions requiring a dicussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Heating Equivalent East Texas Crude and Natural Gas

Will you please advise how many cubic feet of natural gas is equivalent to one barrel of East Texas crude oil in heat units?—W. D. D.

The gravity of East Texas crude oil is about 39 degrees A.P.I. The well-known formula, devised by Sherman and Kropff in 1908, may be used for estimating the heating value of any oil when an actual determination is not available. This formula is:

B.t.u./lb. = 18,650 + 40 (A.P.I. deg. — 10)

Making the calculation on the basis of 39 degrees gravity, the value of 19,810 B.t.u. per pound is obtained.

The heating value of natural gas does not vary much from 1,000 B.t.u. per cubic foot.

A barrel of 39 degrees gravity, specific gravity 0.8299, oil would weigh 0.8299 × 8.33 (water lbs./gal.) × 42 = 290 pounds. Then 290 × 19,810 = 5,744,900 B.t.u. per barrel.

This is equivalent to 5,745 cubic feet of natural gas of 1,000 B.t.u. per cubic foot.

Determination of Knock Rating As Octane Numbers

Could you inform me as to the apparatus now being used for determining the antiknock value, the method of expressing the results and if any standard procedure for antiknock value has been adopted?—L. S.

The knock rating of motor fuel may be determined by making a series of tests in an engine especially designed for testing. The behavior of an unknown fuel is compared and matched with that of a reference fuel of known value. While no engine and operating method has been generally adopted as standard the essential principles of the method have been widely accepted in the United States. The first engine designed for this purpose was of the one-cyclinder type with a special device for measuring the knock. The work done with this engine and the extensive research work conducted by numerous investigators have resulted in the design of a new engine with modifications and improvements in the details of the method. This engine was brought to its present stage through the study of a co-operative committee, the new engine being named the C.F.R. (Co-operative Fuel Research) engine or motor. The first engine is known as the Ethyl Gasoline Engine, a large number of which are in use.

The authorities have accepted the method of grading motor fuels in terms of octane number. Heptane is a bad knocking hydrocarbon, while octane does not knock at all. By making up a number of samples, mixtures may be available which will match the knock tendency of any motor fuel when tested in the motor by the trial and error method. The results are expressed in octane numbers; for example, if an unknown gasoline exactly matches, by the engine method, a mixture containing 60 per cent octane it is reported to have a knock rating of 60 octane number.

This is a very brief statement of the matter. Octane number has been defined a number of times and many references have been made to the knock testing methods in many issues of The Oil and Gas Journal. Many articles on the subject will be found by consulting the semi-annual index.

Summary of the Current Federal Specifications for Gasoline

I am desiring information relating to the latest specifications relating to gasoline for motor fuels and aviation fuels. Are those set forth by the American Petroleum Institute and the U. S. Government the same? In examining a number of aviation gasolines manufactured by various companies I find they vary considerably.—R. D. H.

The information I have indicates that the specifications that may be obtained through the American Petroleum Institute are the same as those announced by the Government. There are, however, some differences in the details of the specifications for petroleum products as prepared by the several departments of the Government.

The U. S. Government specifications for gasoline, motor fuels, and aviations gasolines are now published in the Federal Standard Stock Catalog, which may be obtained, at the rate of 5 cents for each product, from the Superintendent of Documents, Washington, D. C. The ordinary gasoline is designated Motor Gasoline and the highly volatile emergency product is called Motor Fuel V. There are two grades of aviation gasoline, known as Domestic and Fighting grade. There are slight differences in the specifications for these as required by the Army and Navy.

It should be noted that the following are tentative specifications, subject to revision at any time.

Motor Gasoline—The Government reserves the right to reject material during the months of January, February and March in those localities where the normal mean minimum temperature during the month of January is less than 27° F. if when the thermometer reads 149° less than 10 per cent shall have been evaporated.

The Government reserves the right to reject material (a) in those localities where the normal mean temperature during the month of January is greater than 27° F. if the vapor pressure at 100° F. exceeds 10 pounds/square inch; (b) during the months of June, July, August and September if the vapor pressure at 100° exceeds 8 pounds/square inch.

SUMMARY OF FEDERAL SPECIFICATIONS FOR GASOLINE

Kind—	Aviation		U. S. Motor	Motor Fuel V
	Domestic	Fighting		
Specification No.	Army 3,559-B	Army-Y-3,557-F	VV-G-101	VV-M-571
Corrosion	Negative	Negative	Negative	Negative
Color	Not regulated	Blue	Not regulated	Not regulated
Gum	15 mgm. (2 hrs. glass)†	10 mgm. (4 hrs. glass)†	Not regulated	Not regulated
Sulphur, %	0.10	0.10	0.10	0.10
Antiknock octane No.	55	87	Not regulated	Not regulated
Distillation:				
Per cent evap. min.:				
10	167° F.	167° F.	167° F.	158° F.
50	221°	212°	284°	257°
90	311°	275°	392°	356°
96	347°	(*)	.....	.....
Endpoint	374°	(*)	.....	.....
Residue max., %	.....	.....	2	.....
Loss, %	2	.....	.....	.....
Recovery	96%	.....	95.0	.....
Freezing point	—76° F.	—76° F.	.....	.....
Vap. pres. at 100° F.	6.5	6.5	8/12.0	10.0

*Total of 10-50-90 per cent points shall not be less than 564° F. †Accelerated test.

Navy Aviation, Domestic grade—Color +25, octane number 73, vapor pressure 7 pounds. The distillation range and other specifications are the same as for the Army Fighting grade.

Knowles Continuous Process for Making Petroleum Coke

Some time ago we read an article in the Journal about the Knowles coking still. We are operating a 200-bbl. tube still and contemplate erecting a coking still and will appreciate very much if you will give us the details of this process and the equipment required with operating data. Also royalty rate and to whom paid? —S. M.

The Knowles process is designed for the purpose of making a firm petroleum coke with a high fixed carbon content from residue, such as obtained from topped crude and from cracking stills.

The heavy oil, about 8 to 10 gravity, is handled hot from an insulated tank to a pipe still, where the temperature is raised to about 800° F. This heated oil goes to a manifold where it is diverted to feed the ovens. There are six ovens in the system, each one operating on an eight-hour cycle at 1 hour and 20 minutes apart. At any time the condition of the battery will include one oven just cleaned and receiving the oil, the next three ovens in full operation, and the fifth and sixth in drying stages or discharging.

The oil is sprayed onto the hearth of the oven, which is maintained at 2,400° F., from a fire under each oven. The coke layer is built up until it reaches a thickness of 6 to 8 inches in 5 hours and 20 minutes, then the oil is cut off and drying started. The average cycle is: feeding 5 hours and 20 minutes; drying two hours; pushing or discharging 40 minutes.

The vapors from the coking stage are conducted through towers and coolers where any liquids are recovered, then the gas goes to the recovery plant for the extraction of gasoline.

This outline suggests that the process is continuous and adapted to handling large quantities. The plant described in detail in The Oil and Gas Journal, September 10, 1931, page 16, averages 1,500 bbls. of charging stock each day. It does not appear that it would be practicable to reduce the size of the plant so that the capacity would be adapted to a crude capacity of 200 bbls. per day.

The Knowles process, patented in the United States and abroad, is owned by the Tide Water Oil Co. and H. A. Brassert & Co. Details may be obtained from the Brassert-Tide Water Development Co., 310 South Michigan Avenue, Chicago.

Method for Detecting Petroleum Product in Turpentine

I am searching for the method used for detecting the presence of a petroleum product in turpentine in which the distinction is made by measuring the refractive index of the acid treated residue. Any help you can give me will be appreciated.—M. S. W.

The Hersfeld-Bohme method for detecting the presence of small quantities of petroleum distillates in turpentine was devised over 25 years ago. It was studied by Vetch and Donk at the U. S. Bureau of Chemistry, who published the results of their investigations in the Bureau of Chemistry Cir. 85, February 28, 1912.

These chemists modified the original method and made use of 38 normal sulphuric acid, made by adding fuming to the concentrated, diluting and titrating to exact strength. The acid must be stored in a bottle fitted wih a pipette, to avoid absorbing water from the air. The test is made by placing 20 c.c. of the 38 normal acid in a Babcock bottle, surrounded with iced water, add 5 c.c. of the turpentine, gradually mix. Bring to 140° to 149° F. on a water-bath, shaking from time to time without stopper in the bottle. Cool to room temperature, add ordinary sulphuric acid to bring the liquid into the graduated portion of the neck, and centrifuge. Remove a small portion of the oil, by means of a pipette, to the refractometer.

Pure turpentine will give a very small volume, 0.02 to 0.05 c.c., of a straw colored viscous residue having a refractive index at 68° F. of 1.5100 or higher. If a petroleum product is present, the residue is a colorless oily liquid with a refractive index of 1.505 to 1.4300 or lower. The method is of value for detecting very small quantities, of the order of from 1 to 5 per cent; large quantities may be found by simpler methods. A turpentine containing 15 per cent naphtha wil have a distinctive petroleum odor.

NATURAL GAS DEVELOPMENTS

Bay City Gas Franchise Is Still in Controversy

MOUNT PLEASANT, Mich., Apr. 17. Natural gas still goes begging in the Central Michigan Field, but chances are that it will be on the market in the near future. An immediate new market for natural gas of the Broomfield Field, in Broomfield Township, Isabella County, appeared indefinitely checked this past week unless Mayor Nelson of Bay City, who has refused to sign a gas contract with the Consumers Power Co., changes his mind or the contract is made effective through legal steps. The Bay City Commission two weeks or so ago approved a gas contract by a three-to-two vote. The mayor refused to affix his signature. Mandamus proceedings are threatened.

The contract passed by the commission has been accepted by the Consumers Power Co., which stands ready, according to reports, to start immediately with supplying Bay City with a mixed artificial and natural gas and to switch to natural gas when necessary equipment and lines are installed. The Consumers company has a new 8-inch main extending from the Broomfield Pool to Midland. An older 6-inch line connects Midland, Bay City and Saginaw. About 36 miles of new line would be put in before straight natural gas would be available, it was said.

Consumers Power Co. is expected to negotiate with the Saginaw Council in the near future for a similar contract.

Meanwhile the Michigan Natural Gas Corp. has made no indications as to whether it will go ahead with the construction of a gas main from the Central Michigan Field to Bay City and Saginaw. A permit to build the line was granted by the State Public Utilities Commission several months ago and under its terms the line must be under construction before the last of June.

If Consumers Power Co. secures contracts in Bay City and Saginaw it is believed it will use its own pipe line facilities. This possibly would mean the other pipe line company would not build, unless the commission permitted it to extend its line to Flint and Pontiac as originally applied for.

The finding of gas in commercial quantities in Mecosta County by James H. Taggart and others in a test 1,070 feet from the south line and 400 feet from the west line of the James H. Barton farm, NW SW SW Section 11, Austin Township, during March, has aroused much interest. It struck 4,120,000 feet, but went to water, and the owners concluded to send it down to the Dundee. The well will be bradenheaded to save the gas.

LONE STAR GAS REPORT

Report of Lone Star Gas Corp. and subsidiaries for year ended December 31, 1932, certified by independent auditors, shows net profit of $4,660,930 after taxes, interest, depreciation, depletion and amortization, but before subsidiary preferred dividends. This is equivalent after dividends on subsidiary preferred stocks and preferred stocks of Lone Star Gas Corp., to 71 cents a share on 5,382,723 no-par common shares outstanding at end of year, and compares with net profit of $4,885,124 or 75 cents a share on 5,451,043 common shares in 1931.

INTERSTATE GAS COMPACT?

A plan for regulation of interstate transmission of electricity and gas by compacts between states, under Federal sanction, was approved at a conference between representatives of New York State and five adjoining states.

United States Supreme Court Decision in Shelby, Montana, Rate Cutting Case

WASHINGTON, D. C., Apr. 17.—The U. S. Supreme Court has decided the famous Shelby, Mont., gas rate case in which the right of a company to cut rates below a competitor was at issue.

The case was the appeal of the Public Service Commission of Montana et al vs. Great Northern Utilities Co. The decision delivered by Justice Butler follows:

By this appeal we are called on to decide whether an order of the commission prescribing specific, as distinguished from maximum, rates to be charged for natural gas furnished by a public utility is repugnant to the due process clause of the Fourteenth Amendment.

The appellee, authorized by a non-exclusive franchise ordinance, has been engaged since 1923 in furnishing natural gas to consumers in Shelby, a Montana city having a population of about 2,000. It has an adequate distribution system. September 21, 1927, the commission institute an inquiry as to the reasonableness of its rates. The schedule then in force specified for each customer a base rate of 60 cents per thousand feet for the first 5,000 and, by steps, lower rates based on monthly consumption. Apellee filed a schedule effective November 25, 1927, reducing the base rate to 50 cents. The commission approved tentatively and continued investigation.

The Citizens Gas Co., similarly authorized, installed a distribution system and, in October, 1928, commenced furnishing natural gas to consumers in Shelby. Its schedule, specifying a base rate of 35 cents, was approved by the commission. Within a brief period many of appellee's customers left it and have since obtained their gas from the other company. In November appellee filed and, though the commission did not approve, put in force a schedule specifying a base rate of 20 cents. The commission ordered it to submit evidence as to the reasonablness of such rates. Appellee did not support them as adequate or compensatory, but insisted that under competitive conditions then existing they were justified. And it declared that should the Citizens company meet them it would propose a further reduction.

Yield Too Low

The commission January 22, 1929, found the 20-cent schedule too low to yield enough to cover reasonable operating expenses incdluding depreciation; that such rates would tend to imperil or impair appellee's ability dependably to serve, held such schedule contrary to the public interest, condemned the 50-cent schedule as unreasonable and prescribed a base rate of 35 cents, being precisely the same as that filed by the Citizens company and approved by the commission. Appellee refused to charge the rates so ordered and sued to enjoin the enforcement of the order upon the ground that the commission was not empowered by statute to prescribe specific rates and that the order violated the state constitution and the due process clause of the Fourteenth Amendment. The trial court gave appellee judgment on the pleadings. July 29, 1930, the Supreme Court sustained the order, reversed the judgment and remanded the case for further proceedings.

The Citizens company had filed, January, 1930, and without the commission's approval put in force a schedule naming as a base rate 23 cents but subject to a reduction of 3 cents for prompt payment. The record shows that, notwithstanding appellee's reduction to the base rate of 20 cents and a further reduction September 1, 1931, to a flat rate of 15 cents, its sales of gas decreased from 129,000,000 feet in 1927 to 106,000,000 in 1928, to 73,000,000 in 1929, to 67,000,000 in 1930, to 58,000,000 in 1931. The sales of the Citizens company have correspondingly increased. During the first seven months of 1932, the latest period for which the figures are given, appellee sold less than 40,000,000 feet and the Citizens company sold over 67,000,000.

December 22, 1930, appellee brought this suit and dismissed the one in the state court. The district court granted a temporary injunction against the enforcement of the order on the ground that, as the utility necessarily lowered its rates for self-preservation, the order prescribing higher rates was unreasonable and repugnant to the due process clause of the Fourteenth Amendment. In a concurring opinion one of the judges construed the complaint to charge confiscation, and maintained that the order shows that the commission deliberately disregarded the rule entitling public utilities to a fair return and that this, without further evidence, was sufficient ground for temporary injunction. The commission appealed from the interlocutory decree and this court affirmed. Upon the final hearing, on evidence taken before an examiner, the district court found that the community is insufficient to support, at rates affording fair return, the competing systems; that the prescribed rates deprive appellee of its right of competition and would fail to produce legitimate operating expenses, taxes, depreciation and a fair return upon the value of appellee's property. As its conclusions of law, the court declared the order invalid and that the interlocutory injunction should be made permanent. It so decreed.

Rights Construed

The rights conferred upon appellee by the authorizing ordinance are subject not only to the proper exertion of power of the State to regulate its services and rates but also to authority of the city to grant to others the privilege similarily to serve. The city was free to admit other purveyors of gas. The appellee does not complain that the rates imposed upon it by the order differ from those which have been established and are binding on its competitor. The gravamen of its complaint is that the enforcement of the order will deprive it of the "right of competition in rates essential to protection and preservation of its property and business" and of the "right to charge rates concededly less than reasonable rates." The demand for gas in the community served is not sufficient to require both systems and there is no suggestion that it is likely to become great enough to justify the expenditures made for them.

The facts disclosed by the record compel the conclusion that, if competition shall continue in the future as in the past, appellee will not be able upon any rates within constitutional protection against reduction to earn a reasonable return upon the value of its property employed in the public service. The due process clause in the Fourteenth Amendment safeguards against the taking of private property, or the compelling of its

(Continued on Page 78)

Canadian Western Plans Transmission Improvement

CHATHAM, Ontario, Apr. 15.—Announcement was made recently by P. D. Mellon, general manager of the Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary, that the company will continue its search for new gas fields in southern Alberta. Geological survey work, which has been more or less suspended for two years, will, it is understood, be carried on more actively this year.

The company in recent years has been drawing practically all its natural gas requirements from the Turner Valley Field, while surplus gas from Turner Valley has been utilized to rebuild the reserves in the depleted sands of the Bow Island Field. The company has also shut-in production of its own in the Foremost and Burdett Fields in southern Alberta. Geological work previously carried on by the company is understood to have indicated a number of potential gas structures in southern Alberta on which acreage has been secured.

The company is planning to spend money this summer on replacements and improvements to its transmission system in southern Alberta, $90,000 appearing in the budget for this purpose. Last year the company spent considerable sums in replacements of the main pipe line south of Calgary in the Coaldale district near Lethbridge.

O. N. G. Corp. Is Solvent Says Chairman Kistler

There is no reason for receivership for the Oklahoma Natural Gas Corp. in the opinion of Frank E. Kistler, chairman of the board, who says the company is solvent.

An accounting of the company's funds since 1928 and petition for receivership was filed in Federal Court by four stockholders. Hearing will be before Judge Franklin Kennamer April 26.

"The corporation is solvent," Mr. Kistler said. "We have maintained our interest and sinking fund payments throughout the depression. We have endeavored to treat stockholders and creditors fairly."

COLUMBIA DIRECTORS ELECTED

At the annual meeting of the shareholders of Columbia Gas & Electric Corp., held at Wilmington, Del., the following directors were re-elected to serve for the ensuing year: Clarence M. Brown, Philadelphia, Pa.; Floyd L. Carlisle, New York City; Bernard C. Cobb, New York City; Murray H. Coggeshall, New York City; Fred W. Crawford, Columbus, Ohio; George W. Crawford, Pittsburgh, Pa.; Harry J. Crawford, Emlenton, Pa.; Marshall Field, New York City; Philip G. Gossler, New York City; Thomas B. Gregory, Pittsburgh, Pa.; George H. Howard, New York City; James M. Hutton, Cincinnati, Ohio; Henry C. McEldowney, Pittsburgh, Pa.; Charles A. Munroe, Chicago, Ill.; Christy Payne, New York City; John G. Pew, Philadelphia, Pa.; Thomas W. Phillips, Jr., Butler, Pa.; William C. Potter, New York City; Samuel Y. Ramage, Oil City, Pa.; and Harold Stanley, New York City.

AJAX GAS OPERATIONS

CHATHAM, Ontario, Apr. 15.—The annual report of the Ajax Oil & Gas Co. for 1932 shows a gas production from the Ontario fields of 203,718,327 feet compared with 275,481,702 feet in 1931.

PERSONAL PARAGRAPHS

C. W. Murchison, of the American Liberty Oil Company, Dallas, Tex., is visiting in the New York market.

* * *

Firmin S. Cermich, branch manager for the West India Oil Company at Trelew, Argentina, has been awarded a 20-year service button.

* * *

Ernst C. Baehni, director of the Atlantic Refining Company, at Hamburg, accompanied by Mrs. Baehni, is visiting in the United States.

* * *

Casper A. Ruf, assistant general manager, the Parkersburg Rig & Reel Company, Parkersburg, W. Va., made a short business trip to Oklahoma last week.

* * *

Marshall E. Katiell, supervisor of motor vehicles for the Rochester division of Colonial-Beacon Oil Company, has been awarded a 10-year service button.

* * *

W. B. Shakely, superintendent of telephone and telegraph department for the Sinclair Prairie Pipe Line Company, Fort Worth, Tex., was a recent visitor to Tulsa.

* * *

H. M. Fritts, geologist for the Shell Petroleum Corporation, has been transferred from the West Texas to the Gulf Coast district and now has headquarters at Donaldsonville, La.

* * *

H. A. Lundquist, of the Iverson Tool Company, and Phil B. Moore, representative for the Union Lumber Company, both of Tulsa, are making a business trip to Louisiana and points in Texas.

* * *

R. R. Tweed, director, and R. G. Holmes, chief engineer, of British Controlled Oilfields, Ltd., have returned to England from a tour of inspection of the company's properties in Trinidad and Venezuela.

* * *

R. H. Carr, chief production engineer, the Pure Oil Company, Chicago, Ill., has been a visitor to the Tulsa office for the past 10 days. On leaving Tulsa Mr. Carr went to some of the company's properties in Texas.

* * *

John M. Crawford, president, the Parkersburg Rig & Reel Company, Parkersburg, W. Va., visited in Tulsa about a week on his way back to Parkersburg after a trip that took him as far west as California.

* * *

A. W. Little, former drilling superintendent for the Trans-Texas Oil Company, but who has been in California for some time, has returned to take up his old work with the Trans-Texas company in West Texas.

* * *

T. G. Ely, managing director of the Rising Sun Petroleum Company, Yokohama, Japan (Asiatic Petroleum Company), arrived at New York last week on the steamship New York, accompanied by his wife and family.

* * *

R. G. Ervin, manager of the aviation division of Shell Eastern Petroleum Products, Inc., has completed a tour through the southern district in a new Sikorsky five-passenger amphibian, recently acquired by the company. He was piloted by R. T. Wickford.

* * *

Sir John Cadman, G.C.M.G., chairman of the Anglo-Persian Oil Company, accompanied by several directors, is in Teheran to discuss the Anglo-Persian dispute. Sir John has been awarded the gold medal of the British Institution of Mining and Metallurgy—its highest distinction—in recognition of his work in the advancement of technical education and the development of the mineral industries; and of his distinguished public services.

B. T. McNeill, prominent oil broker of Houston, Tex., is visiting eastern oil centers.

* * *

C. F. Gundlach, president of Gundlach y Cia., of Bolivia, distributor of Tide Water oil products, is visiting the New York market.

* * *

Kenneth C. Covell, mechanical engineer, the Pure Oil Company, Chicago, Ill., has been in Oklahoma on company business during the past two weeks.

* * *

J. Elmer Thomas, president of the Bavarian Oil & Gas Corporation, has completed a three months' investigation of the company's concession in Bavaria.

Men of the Industry

COL. J. F. DRAKE

Col. J. F. Drake, president of the Gulf Oil Corporation, was born September 1, 1880, in Pittsfield, N. H., and grew up in New England. Upon leaving Dartmouth College he rapidly worked his way up to treasurer of the Phelps Publishing Company, which position he was holding when the United States entered the World War. He entered military service and when the armistice was signed he was a lieutenant colonel.

During his war service Colonel Drake became acquainted with Andrew W. Mellon, of Pittsburgh. Upon his discharge he was invited to enter the service of the Gulf, which he did in June, 1919. At that time W. L. Mellon was president of the Gulf Oil Company and when Andrew W. Mellon became Secretary of the Treasury under President Harding, Colonel Drake was appointed to serve Secretary Mellon in a confidential capacity.

At the beginning of 1923 Colonel Drake became vice president of the Standard Steel Car Company, a Mellon institution, and in the following November he was elected as its president. When the old Steel Car Company was merged with the Pullman Company, Colonel Drake became chairman of Pullman, Incorporated, continuing in that capacity until April, 1931, when he was chosen to head Gulf Oil Corporation. He still serves Standard Car Securities Company and Standard Car Finance Corporation as president, Pittsburgh Equitable Meter Company as vice president, is a director of Pullman Incorporated, Pullman Company and other corporations.

Henry A. Lardner, vice president of the J. G. White Engineering Company, returned from Europe last week aboard the Bremen.

* * *

Edmundo Martinez, branch inspector for the West India Oil Company at Buenos Aires, has been awarded a 20-year service button.

* * *

Sir Arnold T. Wilson, K.C.I.E., C.M.G., has retired from his position as managing director of the D'Arcy Exploration Company, Ltd.

* * *

F. H. Bedford, Jr., a director of the Standard Oil Company of New Jersey, accompanied by Mrs. Bedford, is on an Easter cruise to Bermuda.

* * *

Conrad T. Fautozzi, assistant general sales manager and manager of the distribution divisions with offices in Chicago, has offered his resignation to be made effective April 30.

* * *

Paul L. Brooks, sales manager, the Parkersburg Rig & Reel Company, Parkersburg, W. Va., is now on a trip through the Mid-Continent fields and was in Texas last week.

* * *

W. W. Oswald, a director of the Anglo-American Oil Company, Ltd., British marketing subsidiary of the Standard Oil Company (New Jersey), has been visiting the home office in New York.

* * *

David Donoghue, producer and consulting geologist of Fort Worth, Tex., gave a review of proration in Texas before the Fort Worth Geological Society at its weekly luncheon at the Worth Hotel, April 10.

* * *

Frank R. Seaver, general manager, Doheny Stone Drill Company, is spending a few weeks in Houston, Tex. The company recently opened a new plant in Houston under the management of S. S. ("Pete") Parker.

* * *

Edward D. Levy, former president of Pierce Petroleum Corporation, has been selected by the reorganization committee of the Fisk Rubber Company as president of the new Fisk operating company.

* * *

W. W. Robinson, Jr., of the research department of The Texas Company, with offices at Beacon, N. Y., has been visiting the various company refineries and is spending several days in Tulsa. Mr. Robinson is well known among the natural gasoline fraternity in particular.

* * *

James R. White, vice president and director of sales of Jenkins Brothers, New York, and Edwin L. Dean, service engineer of the same company, with headquarters in Bridgeport, Conn., were in Tulsa during the past week and are now visiting in the Gulf Coast area in the interests of their company.

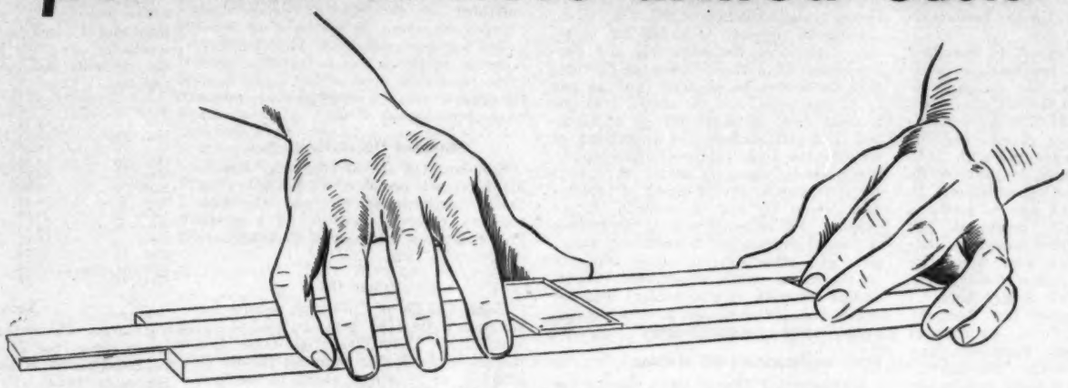
* * *

Sidney Ackerman, New York, an employe of the Standard Oil Company (New Jersey), underwent an emergency appendicitis operation in the Oil City, Pa., hospital last week. Mr. Ackerman formerly was employed with the Oil Well Supply Company and recently returned from Venezuela where he was employed for three years with subsidiary companies of the New Jersey Standard.

* * *

Lester C. Uren, professor of petroleum engineering, University of California, Berkeley, Calif., will be a guest speaker at the first annual convention of the All-Union (Russian) Petroleum Scientific Society, to be held at Baku, Russia, June 10-15. Following the convention, Professor Uren will spend several weeks in observation trips through the Russian and Rumanian oil fields. He will also attend the World Petroleum Congress to be held in London, July 19-25.

Let's get down to a *per-foot-of-hole-drilled* basis



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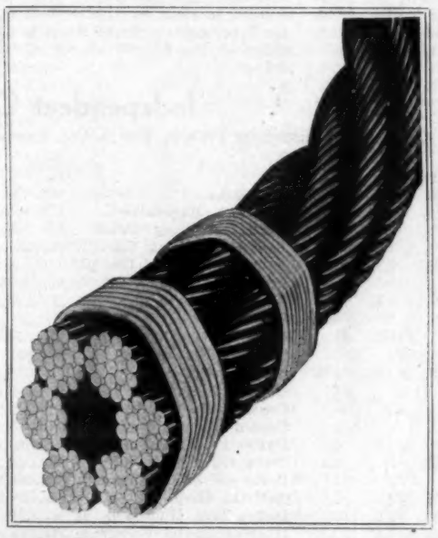

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MARKET RECORD OF OIL SECURITIES

By A. E. Mockler

NEW YORK, Apr. 17.—More buying developed in the oils during the week, and the market was showing considerable activity on some issues. While reports as to conditions within the industry continue conflicting, it is evident that the stock market has already discounted recent unfavorable developments in the production situation.

The 1932 earning report of Standard of California was a constructive influence upon the market. The company reported earnings of $14,014,991 after taxes and charges, equal to $1.07 a share on the average amount of stock outstanding during the year. This compares with $14,559,593, or $1.11 a share, in 1931. While gross income decreased approximately 16 per cent last year, the cost of products sold was substantially decreased, the statement to stockholders stated, so that the net profit for the year was little changed. Major operating economies were effected last year in all departments.

New highs were made last week by Amerada Petroleum Corp., Continental Oil Co., Mid-Continent Petroleum and Phillips Petroleum on the "big board," while on the Curb new highs were made by South Penn Oil, New Bradford Oil, Mountain & Gulf and Creole, the latter coming in for considerable buying on reports that it had completed an important well on the Orinoco Delta in Venezuela.

Continental Oil

Revaluation of the assets and reserves, and a revision of the capital structure are proposed for Continental Oil Co. of Delaware by D. J. Moran, president, who has called a special meeting of stockholders for May 9 to vote on his proposal. Revaluation of assets under the plan will result in net reduction of $61,409,120, including an increase of $1,565,223 in reserves provided for annuities and contingencies. Capital readjustment provides that the shares be changed from no par to $5 par value, and the stated value be reduced from $128,846,867 to $23,692,966. The plan stresses the desirability of revising the book values of the corporation's assets, many of which have been carried substantially in excess of replacement costs. By such a revision, future earnings will be relieved from the burden of annual charges for depreciation, depletion, and other capital extinguishments on the excess values eliminated. Proportionate interests of stockholders will not be affected, and no change is contemplated in the company's maintenance policy.

Standard Oil of Ohio

Standard Oil Co. of Ohio reports for 1932 net loss of $1,206,361 after charges and taxes, compared with profit of $2,359,172 in 1931, equal after dividends on the 5 per cent preferred stock, to $2.34 a share on the 752,467 shares of $25 par common. The company maintained a strong cash position principally through restriction of capital expenditures, which were $847,067 last year, against $4,110,288 in 1931. In this connection, the company's annual report says: "The company cannot expect permanently to maintain its plant with expenditures of less than one-third of the current depreciation charged off, even in the face of lower prices for most materials. The company, however, so far as can be anticipated, is in no immediate need of any major capital expenditures for either new equipment or the replacement of old."

Standard Oil of Kentucky

Standard Oil Co. of Kentucky reports for 1932 net profit of $2,593,981 after charges, depreciation, etc., and after Federal tax reserve, equal to $1 a share. This compares with net of $3,332,183 in the previous year.

Union Oil

Union Oil Co. of California reports for the first quarter of 1933 net loss of approximately $1,100,000 after taxes and charges, as compared with net income of $950,000, or 22 cents a share, in the first quarter last year.

The company has declared the regular quarterly dividend of 25 cents per share, payable May 10 to stock of record April 20. After declaring the dividend, the board of directors issued the following statement: "Future dividends at the rate paid during the last year cannot be continued unless material improvement occurs in the results of the company's operations."

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Wednesday, was as follows:

Sept. 28	15.55	Jan. 4	13.89
Oct. 5	14.44	Jan. 11	14.52
Oct. 11	14.31	Jan. 18	13.76
Oct. 19	14.37	Jan. 25	13.37
Oct. 26	14.43	Feb. 2	13.26
Nov. 2	13.99	Feb. 8	13.21
Nov. 9	14.36	Feb. 15	13.14
Nov. 16	15.15	Feb. 21	13.14
Nov. 23	14.61	Mar. 1	11.91
Nov. 30	14.04	Mar. 15	14.22
Dec. 7	13.31	Mar. 22	12.66
Dec. 14	14.21	Mar. 29	12.35
Dec. 21	13.53	Apr. 5	12.60
Dec. 28	13.50	Apr. 12	12.04

Amerada

Amerada Petroleum Corp. and subsidiaries report for 1932 net profit of $1,147,207 after depreciation, depletion, drilling costs, taxes and after deduction of $54,572 for inventory adjustments, equal to $1.48 a share on the 774,875 shares of no-par capital stock, excluding 147,200 shares held in the treasury. In 1931, net loss of $1,701,648 was shown after

Independent Oils on New York Curb

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ended April 8)

1933 High	1933 Low	Week ended Apr. 8 Sales	Week ended Apr. 8 High	Week ended Apr. 8 Low	Close Apr. 12	Stocks—		Outstanding capital	Par value	Div. rate	Payable or last paid	1930 High	1930 Low	1931 High	1931 Low	1932 High	1932 Low
⅝	1/16	100	1/16	1/16	1/16	American Maracaibo	(sh)	700,000	N.P.	....	.....	4½	½	1¾	¼	¾	¼
1⅞	1⅜	200	1¼	1¼	..	Arkansas Natural Gas	(sh)	4,084,225	N.P.	....	.....	16¾	4⅝	6½	1⅞	3¾	⅝
2	1	2,900	1¼	1⅛	1⅛	Arkansas Natural Gas "A"	(sh)	3,522,521	N.P.	....	.....	16⅝	4⅝	6¾	1⅞	3⅜	½
3¼	2	200	2¼	2¼	..	Arkansas Natural Gas pfd.	(sh)	2,193,000	$10	....	4- 1-32	8⅛	6¼	7	3⅞	5⅝	1½
7⅜	6⅛	No sales	..	..	..	British American Oil Corp.	(sh)	2,622,642	N.P.	20cQ	3-14-33	23	13⅜	16⅞	6¼	9¾	6¾
½	¼	2,400	½	⅜	..	Carib Syndicate		$131,250	25c	....	.....	2⅜	⅝	2⅜	¼	¾	¼
3½	2	43,700	2¼	2	2¼	Cities Service	(sh)	36,979,065.	N.P.	....	6- 1-32	44¼	13	20¾	5	6⅞	1¼
17⅛	10½	1,500	12	10⅝	11	Cities Service pfd.	(sh)	1,125,931	N.P.	....	6- 1-31	93⅞	78¼	84¾	35⅜	53⅜	10
1/16	1/16	No sales	..	..	..	Colombia Syndicate		3,250,000	N.P.	....	.....	21	3⅝	7⅛	1	¼	1/16
1¼	⅝	1,000	¾	⅝	⅝	Columbia Oil & Gasoline v.t.c.	(sh)	$2,000,000	$1	....	.....	¾	⅛	½	1/16	2⅛	½
½	¼	No sales	..	..	..	Colon Oil	(sh)	2,200,000	N.P.	....	.....	8¼	1⅛	3⅛	⅛	1¼	⅛
1¼	1	No sales	..	..	..	Consolidated Royalty Oil Co.		$5,527,880	$10	5cQ	1-25-33	5⅞	2	2¾	1	2	1
2⅛	⅞	No sales	..	..	..	Cosden Oil	(sh)	323,950	N.P.	....	.....	74⅝	1⅛	3¾	⅜	2⅞	⅛
3⅛	2⅛	No sales	..	..	..	Darby Petroleum	(sh)	609,696	N.P.	....	10-15-30	21¾	4¼	5	1⅜	7⅛	1⅜
1¼	⅞	400	1¼	1	..	Derby Oil & Refining	(sh)	500,000	N.P.	....	....	11	2	6	1½	3	1
..	..	No sales	..	..	..	Derby Oil & Refining pfd.	(sh)	19,049	N.P.	....	.....	60	30	40⅛	25	24½	10½
32¼	24	12,000	32¼	27	..	Gulf Oil Corp.	(sh)	4,504,921	$25	....	10- 1-31	106¾	58½	75½	25⅜	44¾	23
1½	1¼	200	1½	1⅜	..	Indian Terr. Illum. Oil "B"	(sh)	7,090,037	N.P.	....	.....	53½	12⅝	16⅞	5	4½	1½
⅛	1/16	1,300	1/16	1/16	1/16	Intercontinental Petroleum		$5,682,000	$5	....	.....	1¾	⅜	⅝	⅛	¼	1/16
1	⅝	300	⅞	¾	..	Kirby Petroleum	(sh)	750,000	N.P.	10c	4-15-33	3	⅞	1⅞	¼	1	⅜
1/16	1/16	No sales	..	..	..	Leonard Oil & Development		$50,000,000	$25	....	.....	5	¾	2	½	¾	⅛
⅞	1/16	1,600	¾	1/16	..	La. Land & Exp.	(sh)	3,000,000	N.P.	....	.....	4⅜	½	1½	¼	2½	½
2¼	1½	No sales	..	..	1⅛	Lion Oil & Refining	(sh)	250,000	N.P.	....	10-27-30	29	4⅞	6¾	1½	3½	⅞
7⅝	4¾	2,100	5⅜	4¾	6	Lone Star Gas	(sh)	5,000,000	N.P.	16cQ‡	3-31-33	55⅞	19⅝	25	5½	11	3⅜
6½	4	No sales	..	..	..	Margay Oil Corp.	(sh)	140,757	N.P.	25cQ	1-10-33	16	3	5	1⅞	8	3⅜
4⅞	2½	600	3½	3¼	4¼	Memphis Natural Gas	(sh)	920,000	N.P.	....	4-15-32	22¼	7½	12⅛	4½	5¼	1⅝
2	2	100	2	2	..	Mexico-Ohio Oil Co.		500,000	N.P.	....	.....	7½	1⅝	4⅞	1½	3⅜	1½
½	¼	1,600	½	⅜	..	Mountain & Gulf		$4,000,000	$1	....	4-15-31	¾	⅜	½	⅛	⅜	⅛
3⅜	2½	900	3⅛	2⅝	..	Mountain Producers		$1,682,182	$10	20cQ	4- 1-33	12⅛	3¾	5⅞	2	4⅝	2⅛
13¼	10	400	11	10½	11	National Fuel Gas	(sh)	3,810,183	N.P.	25cQ	1-16-33	41⅜	19⅜	26½	9¾	14⅝	8
1¼	½	2,500	1	¾	1	New Bradford Oil		$7,224,186	$5	....	4-15-31	3½	1⅛	1½	½	⅞	⅜
⅞	½	No sales	..	..	..	New Mexico and Arizona		$1,000,000	$1	....	.....	7¼	1½	3	¾	1¼	⅜
⅝	½	2,500	⅝	½	..	North Central Texas	(sh)	262,446	$5	....	9- 2-30	11¼	2⅛	3¼	⅝	1½	⅝
⅜	1/16	700	¼	⅛	..	North European Oil	(sh)	1,372,391	N.P.	....	.....	6¼	⅜	2⅛	¼	⅜	1/16
3	3	100	3	3	..	Pacific Western Oil	(sh)	1,000,000	N.P.	....	.....	19½	5½	15	2⅞	8	3
1/16	⅛	No sales	..	..	..	Pantepec Oil	(sh)	1,595,500	N.P.	....	.....	4⅜	⅞	2	⅜	⅝	1/16
..	..	No sales	..	..	..	Reiter-Foster	(sh)	388,584	N.P.	....	12- 2-29	5⅜	1	3⅛	¼	½	1/16
¼	¼	No sales	..	..	..	Richfield Oil pfd. x.w.	(sh)	399,950	$25	....	.....	23½	6½	11	¼	1	⅛
1	⅝	No sales	..	..	..	Ryan Consolidated	(sh)	296,931	N.P.	..	.....	8⅝	2	3	⅜	2⅛	⅝
½	⅜	500	⅝	⅜	..	Salt Creek Consolidated	(sh)	1,286,300	$10	....	4- 1-31	2½	½	1⅜	⅛	⅞	⅛
4½	3½	2,100	4⅛	3¾	4¼	Salt Creek Producers	(sh)	1,496,859	$10	25c	2- 1-33	15¼	5¼	7¾	2¾	5½	2⅞
⅝	¼	500	¼	¼	¼	Sunray Oil	(sh)	1,163,185	$5	....	4-15-31	10	2	5¼	¼	⅝	¼
8	6¼	1,000	6¾	6¼	7	Texon Oil & Land	(sh)	936,036	N.P.	25c†	12-30-32	19½	8	12⅞	2½	10½	4½
⅛	1/16	2,000	1/16	1/16	..	Venezuelan Petroleum	(sh)	755,090	$5	....	2-15-30	4¼	⅜	1⅞	¼	11/16	⅛
2⅛	1½	No sales	..	..	..	Woodley Petroleum		$500,000	$1	....	3-31-29	5	½	3½	1⅛	2⅜	1⅛

*Ex-dividend. †Plus extra dividend of 25 cents. ‡Payable in stock. §Paid in lieu of regular cash dividend of 2 per cent.

charges. Amerada Petroleum Corp. has declared the regular quarterly dividend of 50 cents per share, payable April 29 to stock of record April 15.

Mid-Continent

Mid-Continent Petroleum Corp. and subsidiaries report for 1932 net loss of $2,081,900 after depreciation, depletion, abandoned and surrendered leases and after provision of $498,475 to adjust crude oil inventories to market values. This compares with net loss of $4,962,411 in 1931, after charges.

Consolidated

Consolidated Oil Corp. has declared the regular quarterly dividend of $2 per share on the 8 per cent preferred, payable May 15 to stock of record May 1.

Salt Creek Producers

Salt Creek Producers Association, Inc., and subsidiaries report for the year ended December 31, 1932, profit of $1,208,003 after charges and Federal taxes, but before depreciation, comparing with earnings of $1,393,283 in 1931. Salt Creek Producers, with Mountain Producers, is now getting new revenue from Saltmount Oil Corp., jointly owned, which is developing production in other fields, mainly Texas.

Standard Oil Stocks on New York Curb

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ended April 8)

1933 High	1933 Low	Week ended Apr. 8 Sales	Week ended Apr. 8 High	Week ended Apr. 8 Low	Close Apr.12	Stocks—		Outstanding capital	Par value	Div. rate	Payable or last paid	1930 High	1930 Low	1931 High	1931 Low	1932 High	1932 Low
6	6	No sales	..	..	..	Borne Scrymser		$1,000,000	$25	....	10-15-30	25	11¼	16	6	7	6
27	25	No sales	..	..	..	Buckeye Pipe Line		$10,000,000	$50	75cQ	3-15-33	69	39⅞	56	30	35	17½
90	71	250	73	71	..	Chesebrough Mfg.		$3,000,000	$25	$1Q‡	3-31-33	184⅞	104¼	129½	75	90	53
3⅝	2¼	6,000	2¾	2¼	3⅝	Creole Petroleum	(sh)	5,977,872	N.P.		....	7⅞	3	3⅞	1⅝	3⅛	1⅜
28½	20	100	25¼	25¼	..	Eureka Pipe Line		$5,000,000	$100	$1Q	5- 1-33	54¾	26	36	19	35	18
45	40	1,200	44½	40¾	45¾	Humble Oil & Refining		$74,103,300	$25	50cQ	4- 1-33	119	57¼	72	44¼	55	35⅝
8¼	6½	1,800	6¾	6½	6⅞	Imperial Oil of Canada	(sh)	26,557,496	N.P.	12½cQ	3- 1-33	30	15	18¼	7⅜	10⅞	6¼
4	3⅛	300	3⅜	3⅛	..	Indiana Pipe Line		$3,000,000	$10	15cS.A.	5-15-33	41	14½	21⅛	5½	7½	2¾
10⅞	8⅞	5,500	9½	9	10⅛	International Petroleum	(sh)	14,247,088	N.P.	25cQ	3-15-33	24	11⅜	15½	7⅜	12¾	8
7⅝	5½	300	5¾	5½	..	National Transit		$6,362,500	$12.50	20cQ	12-15-32	22⅜	11½	17½	5	10½	6
3¾	3	200	3	3	..	New York Transit	(sh)	500,000	$5	15cQ	4-15-33	21⅝	10⅛	14½	5⅞	6	2¼
5⅞	4¼	100	4¼	4¼	..	Northern Pipe Line		$1,200,000	$10	25c	3-31-33	54	26¼	35½	20	5½	3⅛
12⅝	11	500	12	11¼	12⅝	South Penn Oil		$30,000,000	$25	25cQ	3-31-33	45⅞	16⅛	23⅞	9¼	16½	9⅝
3½	3	No sales	..	..	..	Southern Pipe Line		$1,000,000	$10	10cQ	3- 1-33	20⅞	8⅜	17	7	10	3⅝
33	24½	100	28	28	..	Southwest Pennsylvania Pipe Line		$1,750,000	$50	$1Q	12-31-32	64	32	42½	25	37	27
22⅛	17	24,700	19⅝	18⅞	19	Standard Oil of Indiana		$393,547,350	$25	25cQ	3- 1-33	59⅞	30	38½	13½	25⅛	13⅛
11⅝	8⅜	3,100	10¼	9⅜	10½	Standard Oil of Kentucky		$26,069,830	$10	25cQ	3-31-33	40½	18⅝	23⅝	12½	15⅞	8⅜
14¼	12½	No sales	..	..	..	Standard Oil of Nebraska		$4,770,550	$25	25cQ	3-20-33	48⅞	34⅝	36½	16	19	10¼
21	15½	1,150	17	15½	..	Standard Oil of Ohio		$18,811,675	$25	37½cQ	1- 3-33	108½	43¼	62½	23	30⅛	15½
1	1	No sales	..	..	..	Swan-Finch Co.	(sh)	34,480	$25	....	1-15-29	10	4	4½	1	2	1⅝

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus $1 extra.

Transactions in Oil Shares on New York Stock Exchange

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ended April 8)

1933 High	1933 Low	Week ended Apr. 8 Sales	Week ended Apr. 8 High	Week ended Apr. 8 Low	Close Apr.12	Stocks—		Outstanding capital	Par value	Div. rate	Payable or last paid	1930 High	1930 Low	1931 High	1931 Low	1932 High	1932 Low
25⅝	18½	4,700	23½	21	25	Amerada Corp.	(sh)	774,875	N.P.	50cQ	4-29-33	31½	16½	23	11¼	22¾	12
16	6¾	70	8⅞	8⅞	..	Associated Oil		$34,356,180	$15	25cQ	.....	51	30	31	8¾	16½	6½
17¼	12⅜	12,500	16½	14¾	16⅛	Atlantic Refining		$67,416,050	$25	25cQ	3-15-33	51⅜	16⅝	23⅝	8⅝	21⅞	8⅝
4¼	3	11,200	4	3½	4	Barnsdall Corp. A		$11,293,895	$5	...	5-11-31	34	8⅝	14½	4	7	3⅜
17⅝	9	24,900	10¼	9	11⅜	Columbia Gas & El.	(sh)	11,684,220	N.P.	20cQ§	5-15-33	87	30⅝	45⅝	11⅝	21	4¼
12	10	200	10¼	10	..	Colonial Beacon Oil	(sh)	1,444,970	N.P.		12-22-22	20⅜	8⅜	10½	7½	12½	9
6¼	5	29,600	6	5⅛	5⅞	Consolidated Oil Corp.	(sh)	14,218,835	N.P.	....	.....	..	..	..	..	9	4
6¾	4⅞	25,700	6½	5⅜	6⅜	Continental Oil of Delaware	(sh)	4,738,594	N.P.	....	12-15-27	30½	7⅜	12	5	9⅜	3⅝
20⅝	13⅜	12,700	19¼	17⅝	19⅛	General American Tank Car	(sh)	751,638	N.P.	25cQ	1- 2-33	111⅞	53⅛	73⅛	28	35⅝	9½
7⅞	4⅝	1,500	7⅛	6	7	General Asphalt	(sh)	413,333	N.P.	..	6-15-32	71½	22⅜	47	9⅝	15½	4⅜
15⅝	8¼	3,300	13¼	10	12½	Houston Oil		$24,968,600	$100	....	10-17-30	116⅞	29¼	68½	15⅝	28¼	8⅝
2	1¼	No sales	..	..	..	Indian Refining		$12,564,070	$10	....	10- 1-30	17	2	4⅝	1⅛	2⅜	1
1	⅝	630	¾	⅝	..	Louisiana Oil Refining	(sh)	1,309,069	N.P.	..	.....	12	3½	4½	1	2¼	½
¾	½	No sales	..	..	..	Maracaibo Oil	(sh)	330,000	N.P.	....	.....	10⅜	1⅜	3¾	½	1½	⅜
5½	3¾	15,100	5⅜	4½	5⅜	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	....	2-16-31	32	11	16¾	5	8⅞	3¾
6½	4	2,300	5¼	4	..	National Supply of Delaware	(sh)	390,879	$50	....	5-15-31	124¾	60	70¼	5	13	3½
7⅞	4¾	18,100	6⅝	5¼	7	Ohio Oil	(sh)	6,648,052	N.P.	....	12-15-32	32	16	19½	5⅛	11	5
12½	12	No sales	..	..	..	Pan American P. & T.	(sh)	4,702,945	$5	10cQ	3-15-33	46½	42	35⅛	20	14	6
12½	11½	No sales	..	..	..	Pan American P. & T. "B"	(sh)	2,474,288	$5	10cQ	3-15-33	67¼	30	36½	18	14½	7¼
1⅛	½	400	⅝	½	½	Panhandle P. & R.	(sh)	198,770	N.P.	....	.....	12¾	1¾	4¼	⅝	1¼	¼
7	4⅜	8,800	6¾	5⅝	6⅞	Phillips Petroleum	(sh)	4,156,908	N.P.	....	1- 2-31	44⅝	11½	16⅝	4	8⅛	2
⅜	¼	100	¼	¼	¼	Pierce Oil Corp.		$29,622,831	$25	....	*	2½	½	1½	¼	¾	⅛
1	⅝	1,100	⅞	¾	..	Pierce Petroleum	(sh)	2,500,000	N.P.	....	2-16-31	7⅛	1¼	3⅜	½	1⅝	½
9½	6⅜	2,200	8	7	7½	Plymouth Oil Co.	(sh)	1,050,000	$5	75cA	.....	..	..	..	..	12½	8½
6	5⅝	100	5⅝	5⅝	..	Prairie Oil & Gas		$61,035,800	$25	....	3-31-31	54	11¼	20⅜	4½	9½	3½
8½	7	200	8½	8½	..	Prairie Pipe Line		$101,250,000	$25	....	6-30-31	60	16⅝	26½	5⅞	12¼	5½
½	¼	200	½	½	..	Producers & Refiners		$37,438,950	$50	..	9-15-23	11⅞	1	6	1	1⅝	⅛
5	3	No sales	..	..	..	Producers & Refiners pfd.		$2,845,350	$50	....	5- 4-25	40	11½	16	3	9¾	1
3⅞	2½	6,200	3⅜	2⅞	3½	Pure Oil		$75,959,250	$25	....	9- 1-30	27¼	7⅝	11⅞	3¼	6½	2⅞
½	¼	400	½	⅜	⅜	Richfield Oil (new)		$52,410,875	N.P.	....	.....	9¾	4⅛	6⅜	⅝	1⅜	¼
21⅝	17⅝	1,500	18¾	17¾	18⅞	Royal Dutch N. Y.	(sh)	611,303	....	80½cet	8- 5-32	56½	36⅞	42⅝	13	23¾	12⅛
20¼	15	4,200	19⅝	17½	19⅜	Seaboard Oil of Delaware	(sh)	1,204,460	$4	10cQ	12-15-32	37	9¾	20⅜	5½	20⅜	6⅝
18	11¼	No sales	..	..	..	Shell Transport & Trading Co.		£23,985,000	£1	53cet	7-22-32	48⅜	26	34	5	16⅝	8
5⅜	4	6,800	4¾	4	4¾	Shell Union Oil	(sh)	13,066,497	N.P.	....	6-30-30	25½	5¼	10¼	2½	8¾	2½
44½	28½	400	33	31½	..	Shell Union Oil pfd.	(sh)	400,000	$100	....	7- 1-31	106¼	55	78	15	65¼	18
6¼	4⅞	300	5⅞	5	..	Simms Petroleum	(sh)	600,000	$20	25cQ	1-16-32	37	5⅝	11	3½	7½	3¼
3¾	3	500	3⅝	3¼	..	Skelly Oil		$27,441,250	$25	....	12-15-30	12	10⅛	12⅞	2	5⅜	2½
27	22	200	25	25	27	Skelly Oil pfd.	(sh)	119,800	$100	....	5- 1-31	99¾	42	62	10	33½	12
7⅞	6	37,200	7	6⅛	6¾	Socony-Vacuum		$793,613,588	$25	10cQ	3-15-33	106⅜	98	106	87⅛	12¼	5¼
101	92½	800	98	97	97½	Standard Oil Export pfd.	(sh)	764,885	$100	$2.50SA.	12-31-32	..	..	21	8⅜	100½	81
26	19½	19,200	24½	21⅝	24¼	Standard Oil of California	(sh)	13,102,900	N.P.	50cQ	3-15-33	75	42½	51⅜	23⅛	31⅞	15⅛
17⅝	12⅜	400	13	12¾	..	Standard Oil of Kansas		$8,000,000	$25	....	3-16-31	49	14⅜	19	7⅜	16½	7
31⅜	22⅜	53,000	27⅜	24⅜	27½	Standard Oil of New Jersey		$637,961,700	$25	25cQ	3-15-33	84⅞	32½	52½	26	37⅝	19⅞
37	35	300	35¼	35	..	Sun Oil	(sh)	1,531,422	N.P.	25cQ	3-15-33	70	39	45¼	26¾	39⅞	24⅝
1¾	¾	1,600	1½	1	1½	Superior Oil Corp.	(sh)	766,979	N.P.	....	12-20-30	9⅜	¾	1¾	¼	2	¾
14½	10¾	13,700	13⅝	11¾	13⅛	The Texas Corporation		$246,204,900	$25	25cQ	4- 1-33	60½	28¼	36¼	9⅞	18¼	9¼
1⅞	1⅜	600	1¾	1½	1¾	Texas Pacific Coal & Oil Co.		$9,304,890	$10	....	12-31-29	14½	4	6½	1⅞	4	1½
..	..	No sales	..	..	..	Tide Water Oil	(sh)	2,190,323	N.P.	....	12-31-32	31	13	18	9⅞	10	5
50	45	200	50	48	..	Tide Water Oil pfd.	(sh)	199,446	N.P.	....	2-15-33	94⅞	71	83	30	62	30
4	3½	4,700	3⅞	3⅜	3⅝	Tide Water Associated	(sh)	5,611,040	N.P.	....	2-16-31	17¾	5⅞	9	2½	5⅝	2
44¼	23½	2,200	26⅝	23½	28¼	Tide Water Associated pfd.		$73,284,500	....	....	1- 1-33	89¾	55	68	20½	60	20
11⅝	8¼	4,300	10⅞	10¼	10	Union Oil of California		$109,651,750	$25	25cQ	5-10-33	50	10⅛	26⅝	11	15⅜	8
12⅞	10½	1,000	12	11	12¼	Union Tank Car	(sh)	1,254,048	N.P.	35cQ	3- 1-33	38½	23	25⅛	16	19¼	11¾
1½	⅝	700	1⅜	⅝	..	Warner-Quinlan	(sh)	632,948	N.P.	....	7- 1-30	27	4¼	7⅜	⅞	2¼	½
3	2	900	2½	2½	2½	Wilcox Oil & Gas	(sh)	428,967	$5	...	5-10-28	21	6½	9⅜	2¾	8¾	2¾

*Ex-dividend. †Interim dividend for 1931. §Payable in 5% convertible preferred stock. A—Paid this year; no regular rate.

In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been stock split-ups.

Supreme Court Decision in Shelby, Mont., Rate Case

(Continued from Page 73)

use, for the service of the public without just compensation.

But it does not assure to public utilities the right under all circumstances to have a return upon the value of the property so used. The loss of, or the failure to obtain, patronage due to competition does not justify the imposition of charges that are exorbitant and unjust to the public. The clause of the Constitution here invoked does not protect public utilities against such business hazards.

Appellee, having undertaken to serve under conditions permitting competition, now insists that it has a constitutional right to unrestrained cutting of rates to destroy the competitor. And for that purpose it has made reductions from the 60-cent schedule in force until shortly before the Citizens company entered the field to the flat rate of 15 cents which yields less than the necessary cost of the service.

The commission found that the rates specified in the 20-cent schedule are too low, unreasonable, liable to impair the service and contrary to the public interest. The decision of the State Supreme Court is to the same effect.

No Infringement

The facts disclosed by the record are not sufficient to show that the exertion by the commission of its power to prescribe specific rates was arbitrary or an infringement of any constitutional right of the appellee.

The appellee contends that the rates prescribed by the order are so unreasonably low as to deprive it of just compensation. The appellants maintain that no such question is presented by the record. The complaint was grounded upon the claim, not that the rates were too low, but that the order prevented appellee from charging lower ones.

It prayed judgment that it be allowed to charge less than the rates prescribed in the order. After the evidence was taken appellee proposed amendment. It merely alleged that the rates prescribed "are not sufficient to furnish plaintiff a fair or any return on the value of its gas plant or system and such rates, if made effective, would confiscate and deprive this plaintiff of its property" without due process of law.

Appellee here admitted that its purpose in asserting the belated claim that the rates specified in the order are too low was not that it might collect more for its services but that it might continue, once the order was set aside, to serve at a loss and so if possible force the other company out of the field.

It is a well-established rule that an allegation merely asserting in general language that rates are confiscatory is not sufficient and that, in order to invoke constitutional protection, the facts relied on must be specifically set forth and from them it must clearly appear that the rates would necessarily deny to plaintiff just compensation and deprive it of its property without due process of law. This allegation is not sufficient.

Reversed.

Central West Fields

(Continued from Page 56)

in Section 19, Plain Township, Stark County.

Stolz and others are spudding on the Joe E. Beech farm, in Section 6, Berlin Township, Holmes County.

In Coshocton County, Palmer & Deisinger have a rig on the Solomon Haun farm, Section 8, Clark Township. Wiser Oil Co.'s test on the Abraham Crowthers farm, Section 18, Perry Township, same county, topped the Clinton lime at 3,092 feet and had a small oil and gas showing at 45 feet in the Clinton, and may be given a shot. McClay Brothers are reported at 2,400 feet in No. 2 on the George Boyd farm, Section 3, same township.

H. E. Perkins and others are reported drilling around 500 feet in No. 1 on the Perkins farm, Section 32, Monroe Township, Knox County.

INDIANA-ILLINOIS

Indiana and Illinois fields failed to report any new completions, although Indiana has quite a few tests that have been under way for some time.

KENTUCKY FIELDS

In the Kentucky fields most of the wells drilling are reported shut down, with expectations of resuming work within a short time. Only two wells were reported, both being in the Owensboro Field of Daviess County. Brenner & Adams' No. 1 well, 600 feet from the north line and 400 feet from the west line of the R. E. Jackson farm, in the Cane Run Pool, was dry at a depth of 840 feet. Hupp, Duff and others drilled a dry hole in No. 8, 604 feet from the south line and 550 feet from the east line of the Aca Bratcher farm, also in the Cane Run Pool, at a total depth of 735 feet.

Kansas Fields

(Continued from Page 49)

20-19-1w, was completed for 28,000,000 feet of gas from 2,932-69 feet.

Harvey County

Stanolind Oil & Gas Co.'s No. 2 Fressee, NW cor. SW NW Section 20-22-3w, is a location. F. Hollow and others' No. 2 Schmidt, NW cor. NE NW Section 17-22-3w, is a location. Derby Oil Co. and others' No. 2 Schmidt, NE cor. NW NW Section 17-22-3w, is a location.

Marion County

Farrell and others' No. 1 Williams, C NW SE Section 21-19-4, was dry and abandoned at 2,942 feet.

Reno County

Olsen Oil Co. and others' No. 2 Adkins, C SW SW Section 35-23-4w, is a rig. Sinclair Prairie Oil Co.'s No. 1 Base, C SW SE Section 26-23-4w, was completed for 25 bbls. of oil and 22,000,000 feet of gas a day from 3,230-3,320 feet. Same company's No. 2 Base, C NW SE Section 26-23-4w, was completed for 16,500,000 feet of gas from 3,237-3,334 feet.

Sedgwick County

Gypsy Oil Co.'s No. 8 Hamant, SW cor. NW NW Section 14-26-2, was completed for 1,187 bbls. of oil from 3,156-59 feet. Same company's No. 9 Hamant, NW cor. SW NW Section 14-26-2, was completed for 1,003 bbls. from 3,157-59 feet.

Woodson County

Sheedy and others' No. 1 Mills, NE cor. SE NW Section 24-25-13, was completed for 6 bbls. from 1,458-67 feet. H. Partridge's No. 1 Dye, C N L, E half SE SE Section 2-24-13, was dry and abandoned at 1,740 feet.

FAST WORK ON PHILLIPS LINE

Rapid progress is reported on the arc welding of 210 miles of 8-inch line for the Phillips Petroleum Co., extending from Oklahoma City to Thrall, Kans. The Kelly-Dempsey Co., Tulsa, is the general contractor. The welding is being done by H. C. Price, Inc., Bartlesville, Okla., using the shielded arc process. The welding machines and "Fleetweld" electrodes used are manufactured by the Lincoln Electric Co., Cleveland, Ohio. The total time for completion will be approximately 75 days.

P. S. MITCHELL DIES

P. S. Mitchell, Chelsea, Okla., widely known in the early Mid-Continent oil areas as a well shooter, died at the home of his daughter, Mrs. William F. McSpadden, in Tulsa. A native of Rousevilla, Pa., Mr. Mitchell moved to Cygnet, Ohio, when a young man and did well shooting in the fields of that area. Twenty-seven years ago he moved with his family to Bartlesville, where he first settled in Oklahoma.

NATIONAL OIL SCOUTS

The National Oil Scouts Association will held its annual convention at the Plaza Hotel, San Antonio, Tex., May 15 and 16.

Summary of California Field Operations for February

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for February amounted to 13,107,043 bbls., an average of 468,109 bbls. per day. This is an increase of 1,648 bbls. per day over January production.

CRUDE PETROLEUM PRODUCTION
(Figures of production and stocks are in barrels of 42 gallons)

Group No. 1—	Bbls. per month	Daily average Feb., 1933	Jan., 1933	Feb., 1932
Coalinga	296,654	10,595	10,916	7,460
Elk Hills	361,894	12,925	12,148	12,730
Fruitvale	141,047	5,037	4,665	3,847
Kern River	353,613	9,022	8,698	9,585
Kettleman Hills-North Dome	1,610,728	57,526	57,358	59,846
Kettleman Hills-Middle Dome	.....	.....	.....	.....
Lost Hills-Belridge	261,714	9,347	9,026	9,128
McKittrick	48,760	1,741	1,743	1,814
Midway-Sunset	1,335,453	47,338	47,965	49,339
Mount Poso	229,336	8,191	7,783	8,097
Round Mountain	81,398	2,907	2,272	2,196
Wheeler Ridge	13,299	475	468	523
Group No. 3—				
Capitan	.....	.....	.....	.....
Elwood	376,949	13,462	13,597	16,767
Rincon	57,790	2,064	2,104	1,610
San Miguelito	27,073	967	938	493
Santa Barbara	18,686	667	420	290
Santa Maria	77,916	2,783	2,657	2,674
Summerland	2,824	101	97	121
Ventura Avenue	1,044,190	37,292	36,542	39,143
Ventura-Newhall	88,027	3,144	3,064	3,610
Watsonville	1,750	62	62	63
Group No. 2—				
Coyote	276,287	9,867	9,763	10,303
Dominguez	506,278	18,081	18,351	14,498
Fullerton (Brea Olinda)	217,615	7,772	7,683	8,840
Huntington Beach	713,284	25,496	25,753	22,179
Inglewood	339,469	12,124	12,206	12,851
Lawndale	7,480	267	248	286
Long Beach	1,962,927	70,105	68,561	81,368
Los Angeles-Salt Lake	25,761	920	891	1,217
Montebello	131,828	4,708	4,683	6,304
Newport	.....	.....	.....	4
Playa Del Rey	345,403	12,336	12,807	19,320
Potrero	16,068	574	582	860
Richfield	172,805	6,172	5,864	6,150
Rosecrans	63,867	2,995	2,950	3,184
Santa Fe Springs	1,471,736	52,562	54,650	66,206
Seal Beach	311,178	11,114	11,193	12,910
Torrance	176,355	6,263	6,116	6,222
Whittier	30,971	1,106	1,118	992
Total February	13,107,043	468,109	466,461	504,030
Total January	14,460,282	466,461	.....	.....
Increase	*1,353,239	1,648		

*Decrease.

TOTAL STOCKS HELD BY CALIFORNIA OIL COMPANIES, BOTH INSIDE AND OUTSIDE THE UNITED STATES

	Feb. 28, 1933	Jan. 31, 1933	Feb. stock decreases	Feb. 29, 1932
Heavy crude and all grades of fuel, gas and Diesel oils	100,060,173	100,796,706	736,533	98,806,315
Refinable crude	39,867,508	39,239,180	*628,328	42,167,334
Finished gasoline, engine distillate and natural gasoline	15,533,326	15,726,068	187,742	17,818,437
Crude gasoline and naphtha distillates	4,734,357	4,842,144	107,787	4,788,185
All other stocks	†6,704,675	‡6,812,386	107,711	$8,001,919
Total all stocks	166,905,039	167,416,484	511,445	171,582,190
*Increase, Barrels of coke included	†655,131	‡661,772		$648,778

OIL FIELD DEVELOPMENT

Group No. 1—	New rigs up	Active drilling	Producers completed	Daily initial output	Active producing	Abnd. wells— Drillers	Abnd. wells— Producers
Coalinga	...	...	...	....	660	...	...
Elk Hills	...	...	...	....	192	...	...
Fruitvale	...	2	1	950	51	...	...
Kern River	2	2	...	....	945	...	...
Kettleman North Dome	1	13	2	8,238	35	...	...
Kettleman Middle Dome	...	...	...	....	....	...	...
Lost Hills-Belridge	1	3	1	2,292	144	...	...
McKittrick	...	...	...	....	115	...	...
Midway-Sunset	1	1	1	300	1,750	...	...
Mount Poso	...	2	2	1,781	96	...	...
Round Mountain	...	...	2	397	22	...	...
Wheeler Ridge	...	...	...	....	34	...	...
Group No. 3—							
Capitan	...	...	...	....	....	...	...
Elwood	...	...	...	....	41	...	...
Rincon	...	1	1	100	34	...	...
San Miguelito	2	2	...	....	2	...	...
Santa Barbara	4	...	...	....	....	...	...
Santa Maria	...	...	...	....	161	...	...
Summerland	...	...	...	....	64	...	...
Ventura Avenue	1	5	3	1,919	156	...	...
Ventura-Newhall	...	14	1	165	439	...	...
Watsonville	...	...	...	....	6	...	...
Group No. 2—							
Coyote	2	1	...	....	85	1	...
Domingues	1	3	...	....	55	...	...
Fullerton	...	...	...	....	357	...	...
Huntington Beach	1	2	...	....	407	...	...
Inglewood	...	1	...	....	216	...	...
Lawndale	...	1	...	....	6	...	...
Long Beach	2	28	4	867	950	...	...
Los Angeles-Salt Lake	...	...	...	....	204	...	26
Montebello	1	2	...	....	151	...	...
Newport	...	...	...	....	....	...	...
Playa Del Rey	1	3	1	100	199	...	...
Potrero	...	...	...	....	12	...	...
Richfield	...	2	...	....	158	...	...
Rosecrans	...	1	...	....	62	...	...
Santa Fe Springs	...	...	...	....	506	...	...
Seal Beach	...	...	...	....	107	...	1
Torrance	...	...	...	....	381	...	...
Whittier	...	...	...	....	140	...	...
Miscellaneous drilling	3	28	...	....	....	5	...
Group No. 4—							
Buttonwillow gas field	...	...	1	gas	2	...	...
Dudley Ridge gas field	...	...	...	....	....	...	...
Goleta gas field	...	...	...	....	....	...	...
February	23	117	19	17,109	5,953	6	27
January	17	98	13	6,382	5,948	9	3
Increase	6	19	7	10,727	5	*3	4
Average for year 1932	18	108	15	13,069	5,928	16	14
Average for year 1931	22	207	21	30,370	8,911	20	15
Average for year 1930	80	434	63	48,710	9,632	21	27

*Decrease.

CLASSIFIED ADVERTISING

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	1 time	2 times	3 times	4 times
3 lines	$1.05	$1.80	$2.55	$3.30
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6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
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Six words usually constitute a line.

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Mail your Classified Advertisement to

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma.

For Sale—Equipment

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air Compressor. Six-inch Oster Pipe Threading Machine. Also, large stock of lathes, pipe machines, milling machines, etc. Send for our list. Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio.

FOR SALE—50 H.P. Miller Single Cylinder gas engine, vacuum pump. Cost $5,000 new. Located 4 miles south Peru, Kansas. See P. A. Gregory, lease foreman.

75,000 feet of No. 1 6" used line pipe for sale for immediate shipment. Pipe located in Texas. Prices gladly quoted upon your inquiry.
LOUISIANA IRON & SUPPLY CO.,
SHREVEPORT, LOUISIANA.

55,000-BBL. STORAGE TANKS
For immediate delivery 30—55,000-bbl. steel storage tanks. Will sell one or more. Located Burkburnett, Texas, or will cut down and re-erect your location with new steel roof at great saving. All tanks strictly guaranteed A-1 condition. Wire, 'phone or write.
SONKEN-GALAMBA CORPORATION,
04 North 2nd Street, Kansas City, Kans.

Equipment Wanted

WILL BUY
FOR CASH
IF CHEAP

One gas engine drilling rig and tools. Must be in good condition and equipped with a Young, Riise or Buffalo motor. Send full particulars with inventory sheet, price and location of rig. Or will buy motor separately.

T. L. BOYCE
222 State Tower Building
Syracuse, N. Y.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Situations Wanted

EXPERIENCED FOREMAN—Crude, pressure stills, reforming and treating. References. Go anywhere. Address Box F-590, The Oil and Gas Journal, Tulsa, Okla.

YOUNG MAN, 28, thoroughly familiar production operation records, desires contact with party interested in securing experienced secretary. Address 1116 Second Nat'l. Bank Bldg., Houston, Tex.

PETROLEUM ENGINEER—10 years experience, 33, married. Experienced in all phases of Production, Gasoline and construction work. Location immaterial, Salary optional. Best of references. Address Box F-591, The Oil and Gas Journal, Tulsa, Okla.

REFINERY ENGINEER—Ten years experience major companies, desires change. Capable plant design, construction and operation. Consider Sales Engineering. Box 2621, Tulsa, Oklahoma.

Patent Attorneys

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form, Evidence of Conception.
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER, ALLWINE & ROMMEL
Suite 418, 815-15th St., N.W.,
WASHINGTON, D. C.

Financing

BONDS THAT SAFEGUARD Investors solve your problem of raising capital for new industries. Write for literature.
Bankers Interstate Security Co.,
Electric Bldg., Denver, Colo.

JOHN MORRIS 7th Floor, 1237 Market St., Philadelphia, Pa., invites full facts first letter from capable parties planning negotiations of reasonable capital support for undertakings distinctly of higher order. Use registered mail, safeguard data.

INQUIRIES solicited — Corporations desiring capital through securities issue.
BROOKWORTH,
110 East 42d St., New York City.

JAMES E. MILLER CO., 207½ E. Third St., Tulsa, Okla., will co-operate with responsible parties seeking aid in financing projects of higher order.

FINANCING
Corporations requiring capital for promotion or expansion are invited to communicate with the undersigned.
WILLIAM R. THURSTON
33 West 42nd Street New York, N. Y.

Established organization with record of successful accomplishment offers immediate action in financing of sound projects.
HENRY W. BENSON
ASSOCIATES
92 Liberty Street New York, N. Y.

Business Opportunities

Capital Seekers—Option your securities to 260 key-men, cost trifling. Details free. Amster Leonard, East Orange, N. J.

REFINERY ENGINEERING CO.
P. O. Box 2621 Tulsa, Okla.
Complete plans, specifications, estimates and appraisals.

WE OFFER warehouse space and transfer service on oil field equipment and materials.
SOUTHERN ENGINE & PUMP COMPANY
Houston, Texas

FULLER'S EARTH or Volcanic Ash of very fine quality and almost unlimited quantity. Very reasonable. Samples furnished. Write E. B. Reeves, Alanreed, Texas.

WANTED—Capable associates, to develop, or will sell outright, an immense deposit of Fuller's Earth, of proven commercial quality, conveniently located within a hundred miles of the oil refining district of Texas. Address Box F-600, The Oil and Gas Journal, Tulsa, Okla.

EXPERIENCED oil man to secure capital for drilling. Three thousand acres.
F. Tickner, Commonwealth Building,
Pittsburgh, Pa.

Royalties—Production

BETTER CLASS
MONTHLY INCOME ROYALTIES
W. E. Cook, Court Arcade, Tulsa, Okla.

ROYALTIES CAREFULLY SELECTED
Oklahoma — Kansas — Texas
G. D. TERRIEN
Philcade Building, Tulsa, Okla.

ROYALTY DEALERS — Pleased to submit the very best Royalties with a free booklet thoroughly covering Royalties. B. L. ABICHT, 609 Ritz Building, Tulsa, Okla.

WILL Sell Income Producing Oil Payments at Substantial Discounts. Stumpff & McFaull, Box 1478, Kilgore, Tex.

PRODUCING OIL ROYALTIES
in Fractional deeds from $100 up.
John L. Dickson, Box 1113, Tulsa, Okla.

JAMES B. McANALLY

Hunt Building, Tulsa, Oklahoma

An organization backed by twenty years' practical oil experience, supplying well selected royalties to dealers only, who are interested in building satisfied clienteles.

ROYALTY OWNERS
Present low oil prices are most favorable for royalty investments. Our twenty years' oil experience assures you of careful and intelligent selection.
Weekly oil report sent free on request.
G. A. SIMON
Exchange Bank Building. Tulsa, Okla.

LOANS MADE ON
ROYALTIES OF MERIT

Will purchase—sell—or trade.
Send me your offerings or write for mine, stating your requirements.

FREDERICK A. SANSOME

Box 441 Greenwich, Conn.

MID-CONTINENT producing and nonproducing oil royalties bought and sold. P. O. Box 1941, Wichita, Kans.

ROYALTIES for dealers, producing, nonproducing Oklahoma, Kansas, Texas, Louisiana. Lowest prices and highest quality. James R. Haynes, Grantville, Kans.

NEW BOOKLET
PRODUCING OIL ROYALTIES from the Engineers Viewpoint, by F. W. Freeborn, Pres., F. W. Freeborn Engineering Corp. Appraisals and reports on oil, gas and royalty properties. Alexander Bldg., Tulsa, Okla. Single copies $1.00.

SELECTING OIL ROYALTIES
for dealers a specialty.
Kansas-Oklahoma City-Seminole.
Chester Imes,
First National Bank Building,
Oklahoma City, Okla.

ROYALTY Service for dealers, fast, dependable, experienced service; lowest prices producing, nonproducing royalties, Kansas, Oklahoma, Texas, Louisiana.
STANDARD ROYALTY SYNDICATE
Box 94, Topeka, Kans.

ATTRACTIVE royalties Webb county; Leases, drilling areas priced right. W. J. Dobbs, 915 Tower Pet. Bldg., Dallas, Tex.

HIGH GRADE producing oil and gas royalties offered to dealers. Billie Smallwood, P. O. Box 2261, Tulsa, Okla.

Royalties—Production

ROYALTIES FOR INVESTMENT
Andrew J. Barrett,
Suite 1901, The Philtower,
Tulsa, Okla.

ROYALTY DEALERS

BE SAFE! — Get an unbiased report on royalties before buying—ask about our service.

ROYALTY ENGINEERS, INC.
Philcade Building, Tulsa, Okla.

INVEST your savings in Producing Oil Royalty; I am selling 1/128 Deeded Royalty Interests under Producing Wells at $75.00 each. Address Guy J. Stumpff, Box 1478, Kilgore, Tex.

PRODUCING OIL ROYALTIES
Bought and Sold.
Inquiries invited from Oil Companies, Bankers, Dealers.
DAVID R. MITCHELL & CO.,
Established 1916.
20 BROAD ST. NEW YORK.

PRODUCING ROYALTIES WANTED

I desire a direct contact with owners of good producing royalties. Position to handle offerings that are sound regardless of the amount of acreage involved. Submit complete details.

LESTER B. GUM,

912 Petroleum Bldg.,
Oklahoma City, Okla.

Leases—Production

NEW MEXICO Oil Leases, Lands & Royalties. Send 30c in stamps for new up to date map of New Mexico showing oil fields, counties, townships, etc. Size 18x20.
Roy G. Barton, Clovis, New Mex.

WARD-CRANE CO. fee 300-A., Sec. 18-B28, 15/16 minerals, $4-A., assuming small state debt. Quick action. Wire or write Attorney Jefferson Smith, Nalle Bldg., Austin, Tex.

ONE HUNDRED barrel oil production. Ohio. Attractive price. F. Tickner, Commonwealth Building, Pittsburgh, Pa.

ECTOR COUNTY — For the next big play. Leases and Royalty. Farm, ranch and oil lands. Dallas homes, to suit. Anderson, 709 Linz Bldg., Dallas, Tex.

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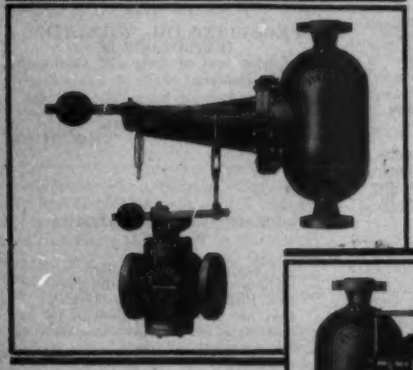
LA. OIL AND FARM LANDS
One of the largest Insurance Companies, that has for many years made loans in La., owns many very fine farms and plantations which are now offered for sale at low prices and upon most attractive terms. Many of these places have strong oil and gas possibilities.
They are located in Caddo, Bossier, Red River, Morehouse, Richland, Natchitoches, East Carroll, Franklin, Catahoula, Rapides, Avoyelles, Evangeline, Acadia, Jefferson Davis, St. Landry, St. Mary, Vermillion, Lafayette, Assumption and many other parishes.
Aside from their mineral possibilities they are among the finest farming lands of the state. For complete information address
NEELY BOWEN,
1209 Union & Planters Bank Bldg.,
Memphis, Tenn.

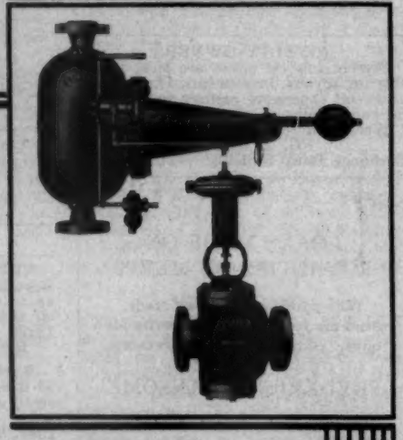
Incorporations

CHARTERS—Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

Reliability of FISHER LIQUID LEVEL CONTROLS...is proved



TYPE 232C
Left: Complete ball bearing equipped Level Control, direct-operated.



TYPE 235D
Right: Remote type Level Control with pilot valve and diaphragm main valve.

Over 70% of all refinery units constructed during the past twelve months have used the FISHER Level Controls.

Engineers Recognize FISHER Reliability As Proved By Their Demands

Engineers have never been more careful in their selection of equipment for refinery construction than in the past few months when it has been necessary to hold costs to a minimum but to be absolutely certain dependable equipment was installed.

The recognition of the reliability of FISHER Level Controls was never more concretely proved than during this time. Over 70% of the construction in the Petroleum Industry has used FISHER Level Controls.

FISHER manufactures a Level Control for every type of service. The new Drawn Steel Float Cages are shown above, and in addition there are semi-steel and cast steel units with internal and external floats of either direct or remote type.

Depend on FISHER for the most reliable Level Controls.

Fisher Governor Company

1003 SANTA FE AVENUE, LOS ANGELES, CALIF. — 20 CHURCH STREET, NEW YORK, N. Y. — 301 SOUTH FIRST AVENUE, MARSHALLTOWN, IOWA

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